The Builder

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The Government Competitions, and the Institute of British Architects.

COMPETITIONS continue to be ill-managed, and will continue to be so until public opinion on the subject be properly formed. The Institute of Architects are about to make an effort in the highest quarter to induce fair dealing towards competitors. At a meeting of the Council, held on the 22nd instant, the following memorial was adopted, and it was resolved, that copies of it should be forwarded to the Right Honourable the First Lord of her Majesty's Treasury, the Chancellor of the Exchequer, the Minister at War, and the Chief Commissioner of Works and Buildings :—

This the humble memorial of the Council of the Royal Institute of British Architects (incorporated 7th Wm. IV.), showeth, that—

On two recent occasions, public exigencies requiring improved Barrack accommodation and new Government Offices, programmes have been published under official sanction, holding out inducements of small immediate, and great contingent profit and honour to architects, whose designs might be adjudged to be the best for national works, the precise nature, extent, and importance of which were clearly defined. Those invitations were amply and ably responded to by many men of great ability and standing in a *liberal* and *honourable* profession, at no small sacrifice to them of time, energy, and money. Authorities, nominated and sanctioned officially, adjudicated upon the designs so proposed, and determined their relative degrees of merit.

The Government are now in actual possession of the best of the designs so selected. Hitherto, the honours and profits contingent upon the realization of their designs have been withheld, in the manner hereinafter stated, from the architects adjudged by the authorities so constituted to be most deserving.

The *Council of the Royal Institute of British Architects* desire *respectfully to represent* that the administration of the country as officially responsible for the issue of such programmes, must remain in the position of parties who have broken faith with those whom they have, of their own motion, induced to assist them professionally, until, as in duty bound, they carry out the engagements for which they stand responsible in the eyes of the world. It would be obviously unworthy of the Government of this country, in dealing with the architectural profession, to shelter itself under any evasion or limitation of responsibility, if such could be alleged; the fact being clear that they have induced a large body of professional men to assist them on conditions which yet remain to be fulfilled by the Government.

It is true that for reasons of policy or economy, it may be inexpedient to carry out the designs fulfilling the conditions framed by those who officially invited the competition, and it would be without the province of any professional body to suggest the impropriety of any Government's modifying or even changing its views; but it may with reason be submitted, that the test of merit having been applied by competition, it would be but fair and wise to consult the successful competitors on any deviation from the scheme officially proposed, and to employ them to adapt their premiated designs, or to make new ones providing for any alterations which may be required.

In the case of the designs for the improved barrack accommodation, the Ordnance estimates show that since the date of the decision on that competition, many hundred thousand pounds have been allotted for works involving a recognition of the premiated designs in that competition. Yet employed to advise in the matter of the authors of above referred to, although in this case an altogether unconditional pledge was given that the architect who obtained the highest prize, an infantry barrack, should be employed to "execute his plans," and "the same for the cavalry."

In the case of the new Government Offices, it appears from the correspondence moved for by Mr. Tite, that the highest official authority is given to the revival of an old design, or the formation of a new one, by an architect not among the premiated in the comparatively recent competition.* Your memorialists cannot sufficiently strongly express their opinion of the impropriety of persistence in any such line of action. Its obvious injustice would entirely destroy all confidence in the integrity of Government, and any reliance professional men might be induced to give to official programmes in the future. While its realization would inflict a serious and almost irreparable injury on the dignity and integrity of a liberal profession.

The attention of Her Majesty's Government is respectfully invited to these circumstances, in the confident hope that they may cause justice to be done in the public interest, and honourable confidence to be reposed where it is assuredly not likely to be abused.

(Signed) M. D. WYATT, } Hon. Secs.
C. C. NELSON, } pro the Council.

With the copy sent to the Chief Commissioner of Works, Lord John Manners, a note will be forwarded asking him to receive a deputation from the Institute to support the prayer of the memorial. It is unnecessary for us to say that we fully agree in the prayer of the memorial, as we have for years urged the point involved. In addition to the question of honesty towards competitors, the condition of our barracks, which shows but too plainly the failure of the present system, and the want of proper professional superintendence, comes into the argument, and leads us to place the memorial prominently before our readers, preceding some further observations on the latter most important subject,—important alike in a financial, moral, and political point of view.

* This correspondence has since been published. It chiefly turns on the decision of the Government to erect a new War-office and a new Foreign-office, and the proposal of Sir B. Hall to invite architects of all nations to compete for the designs. A discussion ensued between Sir B. Hall and the late Lords of the Treasury on the subject of the "premiated" designs of the architects, and the proposed adoption of the plans of Mr. Pennethorne, a step tantamount, as Sir B. Hall contends, to a total disregard of the competition, an architect who did not compete being substituted for the successful competitor. The Lords of the Treasury (the 28th of November, 1857) adhered to their proposed course, although they regretted to be obliged to adopt one not altogether in accordance with the views by which Sir B. Hall had been governed in carrying out the recommendations of the select committee of the Commons' House. On the 28th of December Sir B. Hall urged the Treasury to allow the successful architect for the Foreign-office in the late competition to submit designs for the new office on the limited site acquired by the Act of 1855, instead of employing an officer of the Board of Works. Their lordships (on the 25th of February) adhered to their previous decision, from which it would appear, as we mentioned some time ago, that Mr. Pennethorne's plan for a Foreign-office is likely to be carried out.

METROPOLITAN BARRACKS.

THE Commander-in-Chief is fully aware, it would seem, from his recent speech, of the manner in which our soldiers have been dealt with for years past; admits the truth of the statements which have been made recently on the subject; and throws the blame wholly on those who withhold the funds necessary to provide proper lodgings, where soldiers may live at any rate as long as those who are engaged in the most unhealthy trades in the metropolis. The matter will now probably die away,—and so will our troops, as fast as heretofore. At the first outbreak of the Indian mutiny we urged the Government to send out a sanitary commission with the army, satisfied by the strongest evidence that thousands of lives would be saved by the act. The greatest ignorance of sanitary requirements appears to prevail in India, and the condition of the barracks is frightful. This the Government have known for years; but frightful it still remains. "General Lumley's letter," says Sir Charles Napier, "asks what measures the medical men recommend to prevent a recurrence (of fever among the troops in India, in 1843)? It may be diminished by building good barracks, especially for the Europeans. Less than of a low, bad barrack is in the morn- be painted on the doors, [illegible] barracks should be be held responsible for this being observed. The heat of this country is tremendous, and if men have not thick walls and lofty rooms, sickness is inevitable. Such barracks are expensive, no doubt; so are sick soldiers; so are dead soldiers. But the difference of these expenses is, that the first is once and done with; the second goes on increasing like compound interest, and quickly outstrips the capital."—"Life of Napier," vol. iii. p. 9.

Coming back to London again, let us look in at—

The Knightsbridge Barracks.—To some extent the description we gave of St. George's barracks will apply to these. The block of buildings occupied by the soldiers and such families as are allowed to reside within the barracks, surround an open space; the main front is inclosed by a lofty wall; fronting the park are the officers' quarters, with stables and band-room; certain other parts of the space are occupied by the canteen, dung-heaps, and other inconveniences. The windows of the soldiers' and other rooms are smaller than those of St. George's barracks, and the ventilation is even more deficient. The basement is chiefly occupied by stables, which if anything are better ventilated than the places above. Both here and at the barracks in Albany-street, several of the dwellings of the married soldiers are situated immediately over the stables (we should like to have the statistics of these particular rooms), and many of them have only half a window to light each room. Some of the windows which, with the doors and chimneys, are the only means of ventilation, open with a slide, and this no doubt leads to disputes when there are several families supplied by such a light, half of which is in each room; for when it may be convenient for some to have it open to let in a current of fresh air, it may not be so with others. Seeing how easy it would be to make arrangements which would occupy very little more space if a proper plan were adopted and a true principle of ventilation arranged, it seems like going back to a barbarous age to see the accommodation which is here provided. Not long ago we examined the dormitory of a London prison, not considered one of the best, early in the morning, just after 200 prisoners had left, and found the place with scarcely a perceptible taint. The prisoners slept as closely together, side by side, as the soldiers in the barracks, but there was a sufficient height and a current of air from side to side and at each end, which passed high above the heads of the sleepers without doing harm.

In a properly ventilated barrack, as in the prison, the air in all parts should be, during both day and night, without that heavy and oppressive scent which pervades such of the apartments of the barracks as we have had an opportunity of examining.

We are told that several improvements have been made here during the last dozen years. Formerly the closets were not even provided with cesspools: even now, however, they are neither well constructed nor properly placed. The drainage has also been improved: nevertheless, these barracks are still quite unfit for the reception of even half the number of men and horses now lodged there. As in the case at both St. George's and the Portman-street barracks, even such means as are at hand seem to be little used, showing the great need of sanitary education; for, surely, if the soldier knew better, the present condition of things would not be allowed to remain. From the educated officers of our army we might, at any rate, have expected better things. Great pains are taken to scrutinize the purity of the pipe-clay, the brightness of swords and bayonets, and the polish of brasswork: surely, the inspection of the dwellings of the soldiers should be considered of equal, if not greater, importance. We are told, however, that the superior officers seldom visit the rooms; a fact which of itself shows the necessity of a sanitary staff for the army, whose express duty it should be to examine into and report upon the arrangements which are necessary for the preservation of life and health, and who should be held responsible for neglect. As we have elsewhere said, too, properly qualified architects should forthwith be consulted.

ON THE SELECTION OF OBJECTS FOR STUDY IN THE ARCHITECTURAL MUSEUM.*

BEFORE entering upon my subject, I wish it to be recollected that the lecture is to be expressly with the view to the benefit of the *art-workman*. There is a certain degree of collateral utility in lectures which will convey instruction to architectural students, or suggest topics of thought to architects themselves, or excite the interest of others whose tastes lead them to take pleasure in such subjects; and there can be no doubt that the objects which we have collected here are both useful and interesting to all these classes; but let us never forget that it was *for the use of the art-workman* that the Museum was formed, and that it is to his improvement that the lectures given in connection with it ought to be directed. I beg that this may be understood to be my present object, though, if anything I have to say should be of interest to others, so much the better.

I have on two former occasions attempted a kind of historical sketch of the origin and progress of architectural ornamentation during the Middle Ages, especially as illustrated by objects in our collection. My task on the present occasion is to offer suggestions as to the selection from among the objects of study here presented to you, of such as are most useful in the formation and improvement of your own taste, and most practically suggestive as to your own actual work: and to add to these some further suggestions as to the best uses which can be made of such objects of study.

The importance of a careful selection of objects on which the eye is permitted especially to dwell, cannot be too strongly insisted on. As, in society, a man's character is known by the company he keeps; as our sense of right and wrong is dulled or rendered more sensitive by our careless or scrupulous choice of companions, books, or amusements, so are our perceptions of beauty, harmony, and grandeur in objects of art, in a very great degree dependent upon the care we take in abstaining from the contemplation of those which are calculated to deteriorate, and in seeking out and dwelling upon such as are fitted to refine and elevate our natural taste.

When God "created man in his own image," he implanted in his mind certain powers, both moral and intellectual, which were in a faint degree emanations from His own essence; but every one of which is liable to be corrupted, effaced, or even changed into the very reverse of what was their intention, if we neglect to cultivate the precious germ or abuse it to pernicious purposes. Among the intellectual powers in which man faintly resembles his Creator one of the most conspicuous is, that of producing beauty. We have only to look around us, in whatever direction, to perceive how all-pervading is the presence of beauty in the works of God. Whether we look at the varied surface of our globe with its rich, verdant landscapes, its majestic mountains, whose snowy caps assume ever-changing hues from the purest azure to the most glowing crimson;—its rivers, now flowing with majestic serenity through verdant plains, now dashing violently over rocky beds or overleaping precipices;—the great and wide sea, at one time glistening placidly like a mirror, at another tumultuously raging; or whether we "consider the heavens, the work of His hands, the moon and the stars which He has ordained;"—whether we avail ourselves of the telescope, and penetrating the infinite recesses of space find the utmost distances the eye can reach to teem with His mighty creations; or, reversing the scene, we examine with microscopic aid the smallest of His works, and find them replete with objects invisible to the unaided eye; or whether we direct our attention to organised nature and examine the herbs, the shrubs and trees, with the fruits and flowers which clothe the surface of our globe; or the animals of endless form which inhabit it; and finally, the most perfect of the creations of God, "the human form divine," the one thing which strikes us, before entering upon questions of utility, mechanism, or organisation, is the great fact of their ever-varying, though harmonious and all-pervading BEAUTY.

Man has from the first shown evidence of partaking, though at an infinite distance, of this characteristic of his Creator's image; but differs from it in this,—that whereas God is the fountain of all beauty, whether [illegible] like results are physically able to be frustrated, if he follow his own unaided imaginations, or is led to concentrate his thoughts, or to lean for guidance upon unworthy objects.

This particular faculty is only given in any great degree to a few, and is subject to the same rule which regulates all other human powers and duties,—the rule of *labour, cultivation*, and *watchfulness*.

Even the fertile surface of the earth will not produce what is necessary to human sustenance, without labour and culture. "Thorns and thistles shall it bring forth to thee." "In the sweat of thy brow shalt thou eat thy bread." To cause the earth to produce what is needful to us, it must be cleared from its spontaneous growth,—the soil turned up and broken,—the right manure with proper seed introduced, and that at the proper season, and with the most suitable manipulation; and even then to bring the crop to perfection, it must be watched and tended, or the birds will devour it, the beasts trample it down, the insects blight it, or weeds spring up and choke it. If such be the lot ordained for man in his least intellectual employments, how much more are cultivation and watchfulness needed to bring to perfection the subtle and delicate operations of his mind and imagination? You may depend upon this, that if you have left mechanical handicrafts such as masonry, carpentry, or the plain working of metals, to become carvers or ornamental metallurgists, you will find yourselves grievously mistaken, if you imagine that you are leaving a life of labour for one of ease. You may have,—and if you were right in making the change you *will* have,—far greater enjoyment in your work, inasmuch as not your hands only, but your intellect, your imagination, and your feelings and affections will be employed: but instead of reducing your labour you will be increasing it tenfold; for not only must the labour of your hands be accompanied every moment by that of your head,—in a double sense "the sweat of your brow,"—but when your day's work is over, instead of spending your evenings in rest or recreation, you must devote them to study, to drawing, to examining the works of nature and of the artists of other days, and to thinking over the lessons which those productions are calculated to suggest, and the mode of applying those lessons to your own work. You should study what you see as you walk along the streets;—not their usually base and depressing architecture, but rather the lessons of human expression and of animal life which present themselves, and practise yourselves in transferring them to paper, or rendering them in stone; or, if you are in the country, you should be looking at every plant you pass for suggestions, and studying the habits of birds and wild animals: in short, you must be at work "when you sit in your house, and when you walk by the way, when you lie down, and when you rise up," or you will never do any great things in your art.

We have, however, not only to foster and cultivate our artistic powers with the utmost possible diligence, but we have, further, to guard them against contamination; we must not only study, and, so far as we are able, surround ourselves with what is ennobling, but we must also guard our eyes against what is calculated to deteriorate. We must in our artistic, as in moral, culture, "turn away our eyes from beholding vanity."

We know how strong is the effect of frequently seeing an object, whether beautiful or otherwise: how often we find that which at first sight offends the eye become tolerable by use, or a portrait which a single glance shows us to be bad, seems to lose its defects as we become familiarised to it; yet these deficiencies exist as certainly as at first: it is our own perceptions which are blunted.

The love of colour so constant among the North American Indians has been attributed to the custom of hanging brilliantly coloured toys before the eyes of infants, to amuse them while their parents are hunting; and our own distaste for it to the sombre character of our dress.

We often hear people excuse themselves for mixing in disreputable company or frequenting places of doubtful morality, by saying that their confidence in their own principles is such as to render them proof against any evil results; or even retort upon those who are more careful by attributing their scruples to conscious weakness; yet assuredly the company of the drunkard, the profane, or the licentious has ever been found to undermine the morals of their associates, and just the same will [illegible] perceptions of beauty, he ceases to exercise a rigorous censorship over the objects on which he allows his eye and his mind to dwell, or consents to work in styles of art which he knows to be corrupt.

At all great periods of art, the objects which most frequently met the eye have been such as to foster and aid the artistic perceptions, and even to promote a hereditary instinct for the beautiful, so that the whole population has become imbued with a feeling for, and an appreciation of art, and everything which was executed was more or less good. The very contrary to this is the case with ourselves; the objects continually presented to our view are so depressing and deadening to the taste as to have undermined our sense of beauty, so far as architecture is concerned, and I verily believe to have physically damaged our natural faculties; and that, just as sporting dogs, if left untrained for two or three generations, lose the instincts peculiar to their breed, we are actually born without our due proportion of those feelings which are necessary to the appreciation of art. From the long-continued influence of vicious examples, we have become a damaged race, and can only recover ourselves by a generation or two of extra training.

The formation of this museum was intended to promote this training, and I verily believe it has done a good deal to help it on; and the subject on which I would wish to offer you a few suggestions is the best mode of using the collection to further this great object of artistic renovation.

The great fault of our collection is its miscellaneous character. I do not mean as to style so much as the actual merits of the specimens it contains. In those which we have ourselves systematically collected, we have been able to take some pains in choosing what is really good; but the mass of the collection has been somewhat accidental in its origin. Large quantities of specimens have been purchased for the sake of a certain proportion of meritorious ones they contained; private collections have been presented, containing of necessity objects of different degrees of merit, not to mention the double object of such a museum as this, which is expected, not only to furnish models for study, but to illustrate the historical changes in art, whether they take the form of progression or deterioration. All these causes tend to make a careful selection on the part of the student the more necessary.

The *motives* also of selection on your own part are twofold. You have to inform yourselves on the history of your art, as well as to learn its practice: and even in the practice of your art you are from time to time called upon to execute works in styles differing from that you would deliberately choose, for the sake of harmonizing with existing work which is under reparation; so that a collection which illustrates the history of a style of art has great practical utility, though I would advise the student to pass *very lightly* over all but the works of the best periods.

I would advise you, in obtaining a knowledge of the history of art, to pursue a totally different method from that which you follow in studying for the practice of it. This is the only age in which such a class of knowledge has been deemed necessary. In all former ages people have studied only what they wished to practise, and that has always been *one single style*. The Greek knew nothing of the history even of the style of art of his own country, and in developing which he was himself a practical agent. The Roman knew a little of Greek lineage of the style he was working in, but nothing more. The Mediæval architect never gave a thought to anything but that scene in art-history which he was himself enacting; and even the architects of the Renaissance did not dive further into architectural history than was necessary to enable them to understand the relics of the mighty works of the ancient world whose style they had undertaken to reconstruct.

The history of architecture, as a systematic study, has been reserved especially for the present age, and is one of the peculiar characteristics of our present position. We shall be behindhand with our age if we neglect it, but I am strongly convinced that if we make it our leading object,—if we make it a subject of actual study instead of one on which we should possess general information,—if we endeavour so intimately to acquaint ourselves with every link in the long chain of style, as to be able to reproduce any one of them at pleasure, and to feel almost as much interest in one as in another,—though we may become accomplished antiquaries,

* Read in the theatre of the Museum at Brompton, on Wednesday evening, the 24th, on which occasion, we are glad to be able to acknowledge, the invitation given to carvers and art-workmen was responded to by a very full attendance. At the close of the lecture a cordial vote of thanks to the lecturer, on the motion of Mr. Godwin, was passed.

good art historians, or popular lecturers, we shall not only be *not* fostering our own artistic powers and perceptions, but we shall be actually destroying our capacity for producing any genuine and healthy work of art; and, much as I wish we could, as in former ages, all by common consent and united effort, join in pursuing one noble style of art and one course of vigorous development, I infinitely prefer the zealous and exclusive advocates of any schools of art, be they Greek, Roman, Gothic or Renaissance, to the pampered, nerveless, historical architect, who deems all strong preferences narrow-minded, and who, priding himself on a catholic love of all styles, incapacitates himself from the vigorous practice of any.

I would, then, advise the student, after having taken a general and popular survey of the history of art, passing over it so lightly as not to permit its details to impress themselves too strongly upon his mind, to decide by the best consideration he can give as to what line of art he will himself follow, and to concentrate his studies especially upon *that*. The objects of our early studies should always be those from which we can derive the *best nutriment*, and such as are most easily digested and least mixed with what is not nutritious. A more matured artist may venture to study objects in which the good food has to be severed from the husks—the meal from the bran; but the *student* should begin with the *pure milk* of his art; and, as in these days we none of us rise much above the level of mere babes in art, it will be wiser for us all to keep very closely to real, wholesome, unadulterated food, and not to be for ever running off after objects of study from which a mere modicum of serviceable instruction can be derived, and from which, with our present amount of discernment, we are just as likely to extract poison, or at best something very unsuited to our own constitution and digestive powers, as wholesome food.

I now come to the practical question: which are the examples which we must select for study, and on what principles should our selection be guided? Here my difficulty commences, for among the multitude who think upon such subjects every variety of opinion is to be found. As a general rule, however, I would first suggest that whatever style of art we are studying,—and this rule would hold good equally with Grecian or Gothic,—we should select for special study those of its productions which belong to its most vigorous period of *progression*.

Every style of art has had its *archaic* period, or that in which its first ideas show themselves; its period of *rapid advancement*, with the object of aim still in view; its period of *actual attainment*,—that in which the art ceased to improve; its period of *over-refinement*,—that in which pretty, elegant, and over-elaborated detail was introduced, asperities softened down, the whole made "eye-sweet," and the suggestions of the hypercritical all attended to, but at the same time the noble sentiment of earlier periods evaporated; and lastly, its period of *decline*, more or less rapid, but *inevitable* in its result.

Now, if we are studying a style with a simple view to *self-improvement*, there can be little doubt which of these has the strongest claim upon our regard. Surely we should value more the example of those who were ardently pressing on towards perfection,—whose every thought and energy was devoted to one all-absorbing object—the advancement of their art, than of those of the next generation, who having, through the labours of their predecessors, just attained—or, perhaps, through their own short-comings, just failed of attaining—perfection, were commencing that course of over-refinement which was destined to be the ruin of their art!

The moment of the highest attainment is, no doubt, the focus on which our admiration will be especially concentrated, but the path by which that culminating point was reached has even stronger claims upon the student,—just as with a soldier, while victory is the grand object of his *admiration*, the means of attaining it are the subjects of his *study*. The summit of the hill is exciting, and the descent easy, but it is the *ascending path* which affords really heathful and invigorating exercise.

I would, then, especially commend to the student the productions of that portion of the history of his art which precedes its highest attainment: not the first archaic effort, but the vigorous, determined struggle which immediately precedes the climax of success.

Next in importance is, of course, the culminating point itself. It must of necessity be the great centre of attraction, yet it is less safe as a subject for study than the steps by which it was reached. It needs more caution, lest we mistake the descending path for the summit, and prefer the first steps towards weakness and enervation to those in which primæval vigour is still retained.

The productions of the descending course are hardly to be recommended to the student. In all great styles of art the progress of decay has been attended with continued outbursts of genius, and its earlier stages have often a beauty more fascinating than is found perhaps in the rough laborious path by which the height was gained; but it is a luxurious rather than a manly and vigorous beauty, and, though a matured artist may extract from it lessons which he may correct by his studies from more generous periods, none of us are really proof against the risk of enervation if we dwell too long upon them.

I do not wish to prescribe too narrow bounds to the range to which I would advise you to limit your studies, but would broadly define it as *including every period which is neither so early as to savour of barbarism nor so late as to show symptoms of enervation and luxury*.

Now, let us apply this rule to the productions of Mediæval art, to which I shall limit my remarks.

I have on previous occasions gone over the history of the early days of Mediæval art, showing how in the dreary interval between the fall of the ancient and the dawn of modern civilization, art became (in Western Europe) absolutely dormant; how about the commencement of the tenth century there came a stirring of the dry bones, which resulted in the generating of Romanesque architecture of which our own Norman is to us the most familiar type; and how towards the close of this style a mighty movement took place, which led to the development of Pointed architecture with all its multitude of collateral arts; how during its early days a style of architectural foliage was generated, founded in a great measure (as I then stated, generally, but have since traced out in detail) upon the reminiscences of Classic art, kept alive in the East, and about that time brought more directly under the notice of Western artists through the erection of St. Mark, at Venice, and of a number of churches built in imitation of it in the centre of France. I have, further, shown how from this comparatively lifeless germ sprang forth a style of foliated ornament, perhaps the most remarkable that has ever been made use of;—purely architectural in character, as if invented expressly to be carved in stone, and to grow out of architectural features; approaching closely to nature without directly imitating her; embodying the principles of vegetable growth, without selecting as types its individual productions; and uniting the freedom and elegance of natural foliage with that *firmness, decision, breadth*, and *rigidity*, so especially demanded by architecture.

I then showed how, in the middle of the thirteenth century, this idealization of nature gave way to more direct imitation of her individual works, sometimes modifying them to meet the necessities of material and position, and always "bringing them into service," and arranging them so far artistically as to suit them to architectural purposes, yet in the main faithfully following them, with or without the retention of some conventional features. I then traced the softening down of the rigidity of manner in which natural forms were first used,—a process at its commencement appearing to increase their beauty, but eventually destroying force and nobleness of sentiment, and ending in the abandonment of nature in favour of a second conventionalism,—not as the first, bold, strong, and noble, and ever approaching to and embodying natural principles, but now comparatively feeble and devoid of sentiment, and ever departing further from the rules of nature. Now, I do not wish to take a narrow view of this chapter in the history of art,—it is throughout replete with beauty,—yet in selecting the most worthy subjects for your study, it is manifest that the most profitable are those which unite in the greatest degree refinement with grandeur and noble sentiment.

I would not direct your studies to the early Norman, though it is full of archaic grandeur; much less to the later periods in which that vigour had become so scarce an element as to be quite an exception when we meet with it; but I would especially beg you to concentrate yourselves upon that point of the history of the art which commences with the formation of a new style of foliage out of the Byzantine element, and terminates with the full use of natural foliage in its rigid, unsoftened, and vigorous form. This period commences about 1170, and lasts till the close of the thirteenth century. Of its earliest productions, I will mention the foliage in the nave of Notre Dame at Paris; in the Trinity Chapel at Canterbury; in Glastonbury Abbey and St. David's Cathedral; and among its latest, that in the monuments of Crouchback, in Westminster Abbey, Peckham, at Canterbury, and De Luda at Ely.

A matured and strong-minded artist may learn much by going both earlier and later, but the *student* will be in danger of getting into the habit of imitating rude, archaic efforts if he goes too early, and of losing his sense of vigour and manly force if he is tempted to extend his studies to later periods. Now, you will observe that the range I have taken embraces two very distinct styles of foliated carving—those commonly known as the *conventional* and the *natural*—that in which the foliage is the artistic creation of a particular period, though founded on natural principles; and that in which it goes directly to nature herself for types. It may appear inconsistent to commend both of these systems equally to your study, and I dare say I may be thought extremely latitudinarian in doing so. My friend Mr. Street, in his recent, and in most respects admirable, lecture, said that we must all sooner or later range ourselves under one or other of these banners—the conventional or the natural—and seemed to intimate that, if we adopt the first, we shall be securing strength of character, and if the second, shall be as certain to sink into enervation. I confess I do not see this. I do not see that the principles are antagonistic: on the contrary, I think that the union of the conventional and the natural is necessary to a perfected art; and, holding this, I urge the careful, humble, and loving study of nature herself; the study of the best examples of the application of her productions to purposes of art, and of the best examples of that idealized embodiment of her principles which we understand by the term "conventional." I am quite sure that, by the study of these three things, you have the best chance of striking out a noble course in your own works, and of profiting by the works of those who have gone before you, without falling into a dead and servile reproduction of them.

I intended to have given this lecture in the Museum itself, and to have pointed out, *seriatim*, the classes of objects which I would commend to your special attention; but the present occupation of the Museum by a series of not very cheering illustrations of the prevailing monumental art of our day, and of what it has gained by the Exhibition of 1851, has prevented my carrying out my intention. I will, therefore, roughly enumerate a few of the most striking buildings in which you will find wholesome aids to your studies, and will illustrate the list by specimens selected from the Museum, or by other means which I may chance to have at command.

I will commence by pointing out the two sources out of which the foliated decoration of the thirteenth century was developed—the purely Romanesque and the Byzantine. It is probable that the Romanesque may have itself originated from the Byzantine; but it had settled down into a separate style, such as we see in our own Norman buildings, in the Romanesque of Germany, and in that previous to the twelfth century in France, when, in the last-named country, it was violently disturbed by a fresh importation from the East. We accordingly find in France that the foliage used just at the time of transition into Pointed architecture, is, for the most part, neither Romanesque nor Gothic, but almost purely Byzantine.

Of the Romanesque type of foliage, in its most refined form, you would find a beautiful series of illustrations at St. Cross, near Winchester, and, in our own collection, in the beautiful specimens from the west doorway of Dunstable Priory. Of the Byzantine we have few specimens in England, excepting in the work of William of Sens in the choir (not in the Trinity Chapel) at Canterbury. The specimens of it I will show you are from St. Denis, near Paris, built in 1144, nearly the earliest specimen of the Pointed style, in the earliest parts of Notre Dame, at Paris, about 1170, and one or two other places. You will see that they are merely a Byzantine rendering of the Corinthian; they contain precisely the same class of art as we find in works of the tenth century at Constantinople, in St. Mark's at Venice, and in the church of St. Froud, at Perigueux,—a church built under Venetian influence in Central France.

Now what I have hitherto pointed out I refer to only as the *historical basis* of what follows, *not* as recommending it to your *actual study*. It is most interesting and instructive, and, after you have matured your taste by other means, you may revert to these early works with much advantage; but they are not those to which I would direct the special attention of the student. They are, in the first place, too distinctly derivative from an

ON THE SELECTION OF OBJECTS FOR STUDY IN THE ARCHITECTURAL MUSEUM.*

BEFORE entering upon my subject, I wish it to be recollected that the lectures are to be expressly with the view to the benefit of the *art-workman*. There is a certain degree of collateral utility in lectures which will convey instruction to architectural students, or suggest topics of thought to architects themselves, or excite the interest of others whose tastes lead them to take pleasure in such subjects; and there can be no doubt that the objects which we have collected here are both useful and interesting to all these classes; but let us never forget that it was *for the use of the art-workman* that the Museum was formed, and that it is to his improvement that the lectures given in connection with it ought to be directed. I beg that this may be understood to be my present object, though, if anything I have to say should be of interest to others, so much the better.

I have on two former occasions attempted a kind of historical sketch of the origin and progress of architectural ornamentation during the Middle Ages, especially as illustrated by objects in our collection. My task on the present occasion is to offer suggestions as to the selection from among the objects of study here presented to you, of such as are most useful in the formation and improvement of your own taste, and most practically suggestive as to your own actual work: and to add to these some further suggestions as to the best uses which can be made of such objects of study.

The importance of a careful selection of objects on which the eye is permitted especially to dwell, cannot be too strongly insisted on. As, in society, a man's character is known by the company he keeps; as our sense of right and wrong is dulled or rendered more sensitive by our careless or scrupulous choice of companions, books, or amusements, so are our perceptions of beauty, harmony, and grandeur in objects of art, in a very great degree dependent upon the care we take in abstaining from the contemplation of those which are calculated to deteriorate, and in seeking out and dwelling upon such as are fitted to refine and elevate our natural taste.

When God "created man in his own image," he implanted in his mind certain powers, both moral and intellectual, which were in a faint degree emanations from His own essence; but every one of which is liable to be corrupted, effaced, or even changed into the very reverse of what was their intention, if we neglect to cultivate the precious germ or abuse it to pernicious purposes. Among the intellectual powers in which man faintly resembles his Creator one of the most conspicuous is, that of producing beauty. We have only to look around us, in whatever direction, to perceive how all-pervading is the presence of beauty in the works of God. Whether we look at the varied surface of our globe with its rich, verdant landscapes, its majestic mountains, whose snowy caps assume ever-changing hues from the purest azure to the most glowing crimson;—its rivers, now flowing with majestic serenity through verdant plains, now dashing violently over rocky beds or overleaping precipices;—the great and wide sea, at one time glistening placidly like a mirror, at another tumultuously raging; or whether we "consider the heavens, the work of His hands, the moon and the stars which He has ordained;"—whether we avail ourselves of the telescope, and penetrating the infinite recesses of space find the utmost distances the eye can reach to teem with His mighty creations; or, reversing the scene, we examine with microscopic aid the smallest of His works, and find them replete with objects invisible to the unaided eye; or whether we direct our attention to organised nature and examine the herbs, the shrubs and trees, with the fruits and flowers which clothe the surface of our globe; or the animals of endless form which inhabit it; and finally, the most perfect of the creations of God, "the human form divine," the one thing which strikes us, before entering upon questions of utility, mechanism, or organisation, is the great fact of their ever-varying, though harmonious and all-pervading BEAUTY.

Man has from the first shown evidence of partaking, though at an infinite distance, of this characteristic of his Creator's image; but differs from it in this,—that whereas God is the fountain of all beauty, whether unerring like results are physically to be frustrated, if he follow his own unaided imaginations, or is led to concentrate his thoughts, or to lean for guidance upon unworthy objects.

This particular faculty is only given in any great degree to a few, and is subject to the same rule which regulates all other human powers and duties,—the rule of *labour, cultivation*, and *watchfulness*.

Even the fertile surface of the earth will not produce what is necessary to human sustenance, without labour and culture. "Thorns and thistles shall it bring forth to thee." "In the sweat of thy brow shalt thou eat thy bread." To cause the earth to produce what is needful to us, it must be cleared from its spontaneous growth,—the soil turned up and broken,—the right manure with proper seed introduced, and that at the proper season, and with the most suitable manipulation; and even then to bring the crop to perfection, it must be watched and tended, or the birds will devour it, the beasts trample it down, the insects blight it, or weeds spring up and choke it. If such be the lot ordained for man in his least intellectual employments, how much more are cultivation and watchfulness needed to bring to perfection the subtle and delicate operations of his mind and imagination? You may depend upon this, that if you have left mechanical handicrafts such as masonry, carpentry, or the plain working of metals, to become carvers or ornamental metallurgists, you will find yourselves grievously mistaken, if you imagine that you are leaving a life of labour for one of ease. You may have,—and if you were right in making the change you *will* have,—far greater enjoyment in your work, inasmuch as not your hands only, but your intellect, your imagination, and your feelings and affections will be employed: but instead of reducing your labour you will be increasing it tenfold; for not only must the labour of your hands be accompanied every moment by that of your head,—in a double sense "the sweat of your brow,"—but when your day's work is over, instead of spending your evenings in rest or recreation, you must devote them to study, to drawing, to examining the works of nature and of the artists of other days, and to thinking over the lessons which those productions are calculated to suggest, and the mode of applying those lessons to your own work. You should study what you see as you walk along the streets;—not their usually base and depressing architecture, but rather the lessons of human expression and of animal life which present themselves, and practise yourselves in transferring them to paper, or rendering them in stone; or, if you are in the country, you should be looking at every plant you pass for suggestions, and studying the habits of birds and wild animals: in short, you must be at work "when you sit in your house, and when you walk by the way, when you lie down, and when you rise up," or you will never do any great things in your art.

We have, however, not only to foster and cultivate our artistic powers with the utmost possible diligence, but we have, further, to guard them against contamination; we must not only study, and, so far as we are able, surround ourselves with what is ennobling, but we must also guard our eyes against what is calculated to deteriorate. We must in our artistic, as in moral, culture, "turn away our eyes from beholding vanity."

We know how strong is the effect of frequently seeing an object, whether beautiful or otherwise: how often we find that which at first sight offends the eye become tolerable by use, or a portrait which a single glance shows us to be bad, seems to lose its defects as we become familiarised to it; yet these deficiencies exist as certainly as at first: it is our own perceptions which are blunted.

The love of colour so constant among the North American Indians has been attributed to the custom of hanging brilliantly coloured toys before the eyes of infants, to amuse them while their parents are hunting; and our own distaste for it to the sombre character of our dress.

We often hear people excuse themselves for mixing in disreputable company or frequenting places of doubtful morality, by saying that their confidence in their own principles is such as to render them proof against any evil results; or even retort upon those who are more careful by attributing their scruples to conscious weakness; yet assuredly the company of the drunkard, the profane, or the licentious has ever been found to undermine the morals of their associates: and just the same will [illegible] perceptions of beauty, he ceases to exercise a rigorous censorship over the objects on which he allows his eye and his mind to dwell, or consents to work in styles of art which he knows to be corrupt.

At all great periods of art, the objects which most frequently met the eye have been such as to foster and aid the artistic perceptions, and even to promote a hereditary instinct for the beautiful, so that the whole population has become imbued with a feeling for, and an appreciation of art, and everything which was executed was more or less good. The very contrary to this is the case with ourselves; the objects continually presented to our view are so depressing and deadening to the taste as to have undermined our sense of beauty, so far as architecture is concerned, and I verily believe to have physically damaged our natural faculties; and that, just as sporting dogs, if left untrained for two or three generations, lose the instincts peculiar to their breed, we are actually born without our due proportion of those feelings which are necessary to the appreciation of art. From the long-continued influence of vicious examples, we have become a damaged race, and can only recover ourselves by a generation or two of extra training.

The formation of this museum was intended to promote this training, and I verily believe it has done a good deal to help it on; and the subject on which I would wish to offer you a few suggestions is the best mode of using the collection to further this great object of artistic renovation.

The great fault of our collection is its miscellaneous character. I do not mean as to style so much as the actual merits of the specimens it contains. In those which we have ourselves systematically collected, we have been able to take some pains in choosing what is really good; but the mass of the collection has been somewhat accidental in its origin. Large quantities of specimens have been purchased for the sake of a certain proportion of meritorious ones they contained; private collections have been presented, containing of necessity objects of different degrees of merit, not to mention the double object of such a museum as this, which is expected, not only to furnish models for study, but to illustrate the historical changes in art, whether they take the form of progression or deterioration. All these causes tend to make a careful selection on the part of the student the more necessary.

The *motives* also of selection on your own part are twofold. You have to inform yourselves on the history of your art, as well as to learn its practice: and even in the practice of your art you are from time to time called upon to execute works in styles differing from that you would deliberately choose, for the sake of harmonizing with existing work which is under reparation; so that a collection which illustrates the history of a style of art has great practical utility, though I would advise the student to pass *very lightly* over all but the works of the best periods.

I would advise you, in obtaining a knowledge of the history of art, to pursue a totally different method from that which you follow in studying for the practice of it. This is the only age in which such a class of knowledge has been deemed necessary. In all former ages people have studied only what they wished to practise, and that has always been *one single style*. The Greek knew nothing of the history even of the style of art of his own country, and in developing which he was himself a practical agent. The Roman knew a little of Greek lineage of the style he was working in, but nothing more. The Mediæval architect never gave a thought to anything but that scene in art-history which he was himself enacting; and even the architects of the Renaissance did not dive further into architectural history than was necessary to enable them to understand the relics of the mighty works of the ancient world whose style they had undertaken to reconstruct.

The history of architecture, as a systematic study, has been reserved especially for the present age, and is one of the peculiar characteristics of our present position. We shall be behindhand with our age if we neglect it, but I am strongly convinced that if we make it our leading object,—if we make it a subject of actual study instead of one on which we should possess general information,—if we endeavour so intimately to acquaint ourselves with every link in the long chain of style, as to be able to reproduce any one of them at pleasure, and to feel almost as much interest in one as in another,—though we may become accomplished antiquaries,

* Read in the theatre of the Museum at Brompton, on Wednesday evening, the 24th, on which occasion, we are glad to be able to acknowledge, the invitation given to carvers and art-workmen was responded to by a very full attendance. At the close of the lecture a cordial vote of thanks to the lecturer, on the motion of Mr. Godwin, was passed.

good art historians, or popular lecturers, we shall not only be *not* fostering our own artistic powers and perceptions, but we shall be actually destroying our capacity for producing any genuine and healthy work of art; and, much as I wish we could, as in former ages, all by common consent and united effort, join in pursuing one noble style of art and one course of vigorous development, I infinitely prefer the zealous and exclusive advocates of any schools of art, be they Greek, Roman, Gothic or Renaissance, to the pampered, nerveless, historical architect, who deems all strong preferences narrow-minded, and who, priding himself on a catholic love of all styles, incapacitates himself from the vigorous practice of any.

I would, then, advise the student, after having taken a general and popular survey of the history of art, passing over it so lightly as not to permit its details to impress themselves too strongly upon his mind, to decide by the best consideration he can give as to what line of art he will himself follow, and to concentrate his studies especially upon *that*. The objects of our early studies should always be those from which we can derive the *best nutriment*, and such as are most easily digested and least mixed with what is not nutritious. A more matured artist may venture to study objects in which the good food has to be severed from the husks—the meal from the bran; but the *student* should begin with the *pure milk* of his art; and, as in these days we none of us rise much above the level of mere babes in art, it will be wiser for us all to keep very closely to real, wholesome, unadulterated food, and not to be for ever running off after objects of study from which a mere modicum of serviceable instruction can be derived, and from which, with our present amount of discernment, we are just as likely to extract poison, or at best something very unsuited to our own constitution and digestive powers, as wholesome food.

I now come to the practical question: which are the examples which we must select for study, and on what principles should our selection be guided? Here my difficulty commences, for among the multitude who think upon such subjects every variety of opinion is to be found. As a general rule, however, I would first suggest that whatever style of art we are studying,—and this rule would hold good equally with Grecian or Gothic,—we should select for special study those of its productions which belong to its most vigorous period of *progression*.

Every style of art has had its *archaic* period, or that in which its first ideas show themselves; its period of *rapid advancement*, with the object of aim still in view; its period of *actual attainment*,—that in which the art ceased to improve; its period of *over-refinement*,—that in which pretty, elegant, and over-elaborated detail was introduced, asperities softened down, the whole made "eye-sweet," and the suggestions of the hypercritical all attended to, but at the same time the noble sentiment of earlier periods evaporated; and lastly, its period of *decline*, more or less rapid, but *inevitable* in its result.

Now, if we are studying a style with a simple view to *self-improvement*, there can be little doubt which of these has the strongest claim upon our regard. Surely we should value more the example of those who were ardently pressing on towards perfection,—whose every thought and energy was devoted to one all-absorbing object—the advancement of their art, than of those of the next generation, who having, through the labours of their predecessors, just attained—or, perhaps, through their own short-comings, just failed of attaining—perfection, were commencing that course of over-refinement which was destined to be the ruin of their art!

The moment of the highest attainment is, no doubt, the focus on which our admiration will be especially concentrated, but the path by which that culminating point was reached has even stronger claims upon the student,—just as with a soldier, while victory is the grand object of his *admiration*, the means of attaining it are the subjects of his *study*. The summit of the hill is exciting, and the descent easy, but it is the *ascending path* which affords really heathful and invigorating exercise.

I would, then, especially commend to the student the productions of that portion of the history of his art which precedes its highest attainment: not the first archaic effort, but the vigorous, determined struggle which immediately precedes the climax of success.

Next in importance is, of course, the culminating point itself. It must of necessity be the great centre of attraction, yet it is less safe as a subject for study than the steps by which it was reached. It needs more caution, lest we mistake the descending path for the summit, and prefer the first steps towards weakness and enervation to those in which primæval vigour is still retained.

The productions of the descending course are hardly to be recommended to the student. In all great styles of art the progress of decay has been attended with continued outbursts of genius, and its earlier stages have often a beauty more fascinating than is found perhaps in the rough laborious path by which the height was gained; but it is a luxurious rather than a manly and vigorous beauty, and, though a matured artist may extract from it lessons which he may correct by his studies from more generous periods, none of us are really proof against the risk of enervation if we dwell too long upon them.

I do not wish to prescribe too narrow bounds to the range to which I would advise you to limit your studies, but would broadly define it as *including every period which is neither so early as to savour of barbarism nor so late as to show symptoms of enervation and luxury*.

Now, let us apply this rule to the productions of Mediæval art, to which I shall limit my remarks.

I have on previous occasions gone over the history of the early days of Mediæval art, showing how in the dreary interval between the fall of the ancient and the dawn of modern civilization, art became (in Western Europe) absolutely dormant; how about the commencement of the tenth century there came a stirring of the dry bones, which resulted in the generating of Romanesque architecture of which our own Norman is to us the most familiar type; and how towards the close of this style a mighty movement took place, which led to the development of Pointed architecture with all its multitude of collateral arts; how during its early days a style of architectural foliage was generated, founded in a great measure (as I then stated, generally, but have since traced out in detail) upon the reminiscences of Classic art, kept alive in the East, and about that time brought more directly under the notice of Western artists through the erection of St. Mark, at Venice, and of a number of churches built in imitation of it in the centre of France. I have, further, shown how from this comparatively lifeless germ sprang forth a style of foliated ornament, perhaps the most remarkable that has ever been made use of;—purely architectural in character, as if invented expressly to be carved in stone, and to grow out of architectural features; approaching closely to nature without directly imitating her; embodying the principles of vegetable growth, without selecting as types its individual productions; and uniting the freedom and elegance of natural foliage with that *firmness, decision, breadth*, and *rigidity*, so especially demanded by architecture.

I then showed how, in the middle of the thirteenth century, this idealization of nature gave way to more direct imitation of her individual works, sometimes modifying them to meet the necessities of material and position, and always "bringing them into service," and arranging them so far artistically as to suit them to architectural purposes, yet in the main faithfully following them, with or without the retention of some conventional features. I then traced the softening down of the rigidity of manner in which natural forms were first used,—a process at its commencement appearing to increase their beauty, but eventually destroying force and nobleness of sentiment, and ending in the abandonment of nature in favour of a second conventionalism,—not as the first, bold, strong, and noble, and ever approaching to and embodying natural principles, but now comparatively feeble and devoid of sentiment, and ever departing further from the rules of nature. Now, I do not wish to take a narrow view of this chapter in the history of art,—it is throughout replete with beauty,—yet in selecting the most worthy subjects for your study, it is manifest that the most profitable are those which unite in the greatest degree refinement with grandeur and noble sentiment.

I would not direct your studies to the early Norman, though it is full of archaic grandeur; much less to the later periods in which that vigour had become so scarce an element as to be quite an exception when we meet with it; but I would especially beg you to concentrate yourselves upon that point of the history of the art which commences with the formation of a new style of foliage out of the Byzantine element, and terminates with the full use of natural foliage in its rigid, unsoftened, and vigorous form. This period commences about 1170, and lasts till the close of the thirteenth century. Of its earliest productions, I will mention the foliage in the nave of Notre Dame at Paris; in the Trinity Chapel at Canterbury; in Glastonbury Abbey and St. David's Cathedral; and among its latest, that in the monuments of Crouchback, in Westminster Abbey, Peckham, at Canterbury, and De Luda at Ely.

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I will commence by pointing out the two sources out of which the foliated decoration of the thirteenth century was developed—the purely Romanesque and the Byzantine. It is probable that the Romanesque may have itself originated from the Byzantine; but it had settled down into a separate style, such as we see in our own Norman buildings, in the Romanesque of Germany, and in that previous to the twelfth century in France, when, in the last-named country, it was violently disturbed by a fresh importation from the East. We accordingly find in France that the foliage used just at the time of transition into Pointed architecture, is, for the most part, neither Romanesque nor Gothic, but almost purely Byzantine.

Of the Romanesque type of foliage, in its most refined form, you would find a beautiful series of illustrations at St. Cross, near Winchester, and, in our own collection, in the beautiful specimens from the west doorway of Dunstable Priory. Of the Byzantine we have few specimens in England, excepting in the work of William of Sens in the choir (not in the Trinity Chapel) at Canterbury. The specimens of it I will show you are from St. Denis, near Paris, built in 1144, nearly the earliest specimen of the Pointed style, in the earliest parts of Notre Dame, at Paris, about 1170, and one or two other places. You will see that they are merely a Byzantine rendering of the Corinthian; they contain precisely the same class of art as we find in works of the tenth century at Constantinople, in St. Mark's at Venice, and in the church of St. Froud, at Perigueux,—a church built under Venetian influence in Central France.

Now what I have hitherto pointed out I refer to only as the *historical basis* of what follows, *not* as recommending it to your *actual study*. It is most interesting and instructive, and, after you have matured your taste by other means, you may revert to these early works with much advantage; but they are not those to which I would direct the special attention of the student. They are, in the first place, too distinctly derivative from an

older art; and, secondly, they do not yet show that bold striking out in a new line which would qualify them for the special selection of the student.

Almost immediately afterwards, however, we find this wonderfully instructive course of advancement to have commenced. In Notre Dame, at Paris, the earliest carving is of the dead Byzantine type, but before even the choir was finished we find a new style of art in the course of being generated,—in the nave to be fully developed, and in the west front to be brought to the highest degree of perfection. In the same way, at Canterbury, though the choir built between 1174 and 1179 has Byzantine foliage, the Trinity Chapel, which immediately follows it, exhibits that of the new type.

Our Museum contains some noble specimens of the earliest productions of this new style, from the nave of Notre Dame, and these I, *in the most unqualified manner*, commend to your careful study. They contain elements of grandeur scarcely to be equalled, and, though I do not advise the actual reproduction of their style, I am quite certain that it is impossible to study them without imbibing something of the truly noble and generous sentiment which pervades them.

You will better understand this magnificent style of foliage, by examining the specimens I exhibit, than by any verbal description; but I may briefly say that its characteristics are *breadth, firmness, truth of curve; harmony with strong, bold architecture, and distinct adaptation to architectural uses.* It contains no minute disturbing detail; its lights are broad, and its shadows deep, without being so undercut as to give an idea of weakening the material: in short, it contains every element of grand architectural ornament, though in its earliest form (of which I am at present speaking), it is less remarkable for that class of beauty which is suited to those smaller features in which grandeur is not one of the objects aimed at.

This, then, is the style especially adapted to afford you lessons in the bolder and nobler elements of your art; and as they are infinitely the more difficult of attainment, and just those in which *you* all,—or I should have said *we* all,—in these days most glaringly fail, I do not care how long you dwell upon this noble phase of the art you have to study.

Though it is most strikingly developed in France, you will find examples equally worthy of your attention in our own country. In English buildings you will always recognize the style of which I am speaking by its nearly constant accompaniment, the *square* abacus. In France, that feature continued very much later, so that it is no mark of very early date; but with us the square abacus very rarely shows itself after the end of the twelfth century, the fully-developed Early Pointed being with us always accompanied by the round abacus. This distinction is the more important as the square form of necessity affected the distribution of the foliage, which had to be so placed as to support the salient angles, whereas no such functional requirement existed where the round abacus was used.

The eastern part of Canterbury I view as a French example, and being the only one many of you may have the chance of seeing, I would strongly recommend to all of you a *Canterbury pilgrimage;* but among purely English works of this period, I would especially single out *Glastonbury.* The pillars there being more subdivided than is usual in French buildings of the same age, it follows that the capitals are not on the same grand scale; but, making due allowance for this, they are, I think, quite equal in merit; and the more closely you study them the better. I regret that we have no specimens of them in our museum; indeed, I hope we may soon take measures to remedy a great defect in our collection, which is at present very poor in English specimens of the Transitional period, though rich in those of the immediately succeeding date.

Besides Glastonbury, I may mention St. David's Cathedral, in which the capitals are very curious, and many of them very fine: some parts of Chichester Cathedral, the Castle Hall at Oakham, some exquisite fragments of the Abbey of St. Mary at York, and a multitude of examples, in which the square abacus prevails. Many of the capitals in this style are, however, of a much simpler kind, having only a plain water-leaf under each angle, but are nevertheless very effective. These abound in the north, as in the refectories of Fountains and Rievaulx abbeys, at Tynemouth, Jedburgh, Kelso, Dreyburgh, and many other noble examples of the style. The only instance of it we have in our museum is, I think, from Farnham Church, in Yorkshire.

The principal English works of the Transitional style in our collection are, one fragment from Canterbury, a series from Dunstable (early in the style), a few from Haughmont Abbey, near Shrewsbury, and some from Worksop Priory.*

THE TREATMENT OF MONUMENTAL SCULPTURE.

PROFESSOR WESTMACOTT'S LECTURES AT THE ROYAL ACADEMY.

THE intention to erect a memorial to General Havelock, on a prominent site in the metropolis, should induce some further consideration of certain questions of art and æsthetics—especially belonging to monuments and sculpture—which may have been departed from in recent works, where the result is unsatisfactory, as well as inferior to what might be expected from the executive skill of our living sculptors, and the actual works of Flaxman and others. Portrait sculpture, the branch to which the intended memorial may chiefly belong, indeed, might be supposed to escape the difficulty which the mind of the artist must solve in the production or design of any monumental or imaginative work of the higher class. That, however, is by no means the case: whether viewing a monument as a simple portrait statue, or considering accessory details—as, for example, *rilievi*—attention to the true principles cannot be dispensed with; whilst the question of the proper treatment of costume is a novel and peculiarly difficult one.

Strongly impressed with the public evidence that misconception of monumental sculpture as a branch of art, did exist; believing that the character and limits of the sculpturesque, and the importance in general grouping and in subordinate details, of the architectonic element, were not understood; we were induced on several recent occasions, to state the views which we had derived from the study of matters belonging to general art as well as to architecture, but which have lately had more attention from architects, and writers on art-manufacture and decoration, than from painters and sculptors. For this course, we claim no present merit of originality: the principles were valuable precisely inasmuch as they were dependent upon natural and immutable laws, to be tested by all; and they had been often before set forth in our pages. But, we may refer to the articles on Sculpture, including the notices of the Westminster-hall exhibition of the Wellington Monument Models,† and other matter, in which we have urged the importance of not merely that paternal alliance between architects and sculptors, which is so desirable for the success of either art in its highest walks, but also of the identified view of what is really one and the same thing as art. For, there are certain principles which belong to all art, and principles which may be adopted from one branch to another; and there are other principles of not less importance, constituting that distinction of aim which is assumed in the vulgar acceptation, and, indeed, properly in professional practice. Either the architect's art or the sculptor's may predominate in a monument; but in either case there must be certain principles which we call architectonic: after these, the distinction between the two classes of works, and integral character respectively, will be sufficiently derived from the professional bias of the artist.

Referring to sculpture for sites out of doors, we suggested that the failure might be due partly to the disregard of the architectonic element, or grouping as a whole, necessarily the pervading principle demanded in a public monument; partly to the want of art in the details of the pedestal, and in the arrangement of the site and accessories; and partly to disregard of the fact that there was a distinctive treatment proper to each material. We showed that the principle suited to bronze, was departed from in a manner which must necessarily be fatal to our works; and we have lately instanced the bronze copies at Manchester, of the marble statues of Dalton and Watt, as special examples of the mistaken line of treatment alluded to. A suggestion as to the desirableness of reconsidering the ingredients of the material, bronze, the composition of which, though of minor importance, might not be unworthy of notice in reference to one of the objectionable characteristics of modern statues,—their heavy, black, and monotonous appearance,—was the subject of some correspondence. Perceiving the limitation of sculpture as a separate art, we have objected to all such allegory as required the aid of description in a guide-book; to all appeals to the observer to take things on trust as representations, excepting, however, the recognised symbolic; to violent and dramatic action in sculpture; and to the confusion between the respective offices of painting and sculpture, as shown in the attempts at perspective and fore-shortening in many modern *rilievi*. The point last named, was, indeed, dwelt upon (not to speak of earlier observations), in the course of the notices of the courts at the Crystal Palace, in our volume for 1854,—particularly with reference to some of the works in the Renaissance Court, the originals of which were executed very soon after the discovery, so-called, of perspective.

These views, we confess, we put forward with some feeling of apprehension, not arising from doubt as to their propriety, but lest we should be considered to assume unduly to teach a class of artists out of our own profession. We have now, however, the highest testimony, on the part of a sculptor, the professor at the Royal Academy, to the correctness of the ground we took as to all the points we have just mentioned, and others. Professor Westmacott, in the four lectures which he has lately delivered, has afforded whatever support might be needed to views which go far to explain the ill-success of recent attempts, and therefore to detract from the taste of many living sculptors. He shows the necessity of the same considerations in sculpturesque treatment, and monumental art, as we have advanced. Having referred to the value of the antique, and the right use of precedent, in terms which may be commended to the attention of every architect, he insists on the inevitable, or proper limitation of the sculptor's art, to expression by *form*, or "unaided by artificial effects of light and shade, or by atmospheric illusion, such as the painter may employ in the sister art;" and speaks of simplicity and repose, approaching to severity, as a principle, and of energetic action even as exceptional. He puts forward "taste, judgment, and selection," in opposition to "mere servile imitation," as belonging to the very idea of Fine Art. He urges the force of the example left us by the ancients, of sculptors and architects working together, and that where sculpture is "to be combined with architecture," it should be treated so as to "serve the purpose of increasing, not injuring, the effect intended by the architect." The question of materials he enters into at some length, saying,—

"It is not the fact that a statue, however well composed, is fitted for whichever mode of execution, carving or casting, may be determined upon. It must be obvious, on a little reflection, that bronze lends itself to the display of energetic action, in works in the round, much more readily than marble. In the former the limbs may be stretched out to their full extent, if necessary, unsupported by any of those unsightly stays which are absolutely necessary in marble; but which, after all, while they clog the lines and deface the composition, frequently do not fulfil their object of securing the safety of the work. It may be received as a general rule that for casting or works in bronze, the style of open composition may be employed. On the other hand, a work in marble or stone requires support in all its parts; and, therefore, demands such a compact style of composition as shall secure, without too prominent an exhibition of the contrivance by which it is effected, the strength of the whole. Bronze, also, is well adapted to show clearly against a sky background; and the work intended for such open situation should be designed with reference to this condition. The limbs, for instance, should be defined, so as to show the action, clearly, at a distance."

Mentioning some examples, he says of one of them, the Mercury of Giovanni Bologna,—

"Such a work could not have been so treated in marble; while in bronze, all this lightness and action are combined with perfect safety and security of the parts."

He instances the Apollo Belvidere, as composed on the principle that applies to a bronze statue, and as being a copy from bronze in the opinion of some of the best authorities, including Flaxman; and the Laocoon as open to the same conjecture; whilst he names the Perseus holding with extended arm the head of Medusa, of Cellini, as an example of the quality of treatment suited to works in metal. And he says:—

"The principle of design in marble differs from this, inasmuch as the sculptor should endeavour so to arrange the parts of his work that the lighter and more delicate details, as the extremities and any flying drapery, should derive support from the parts near them. The hands should be so arranged that, without its appearing to have been a studied expedient, each finger should have a rest at some point: and it is scarcely necessary to tell you how important an element in expression are the hands, and how well it is worthy a sculptor's care that they should not be exposed to injury.

We have ourselves contended that it was the true principle in art, to take advantage of the properties of materials, and seek a distinct character of design as proper to each. And on the other subject we adverted to, he says,—

"It may be interesting to you to know that the mere questions arising out of materials alone, were thought of sufficient importance to engage, of old, the serious attention of the greatest masters of our art. * * * * The

* To be continued.

† Vide vol. xv. p. 29, "Sculpture;" p. 213, "Monuments and Statues;" and pp. 415, 425, 445, 457, and 489.

composition of the metal used was a subject of the greatest care and interest among the artists of different localities. There were rival schools; those of Ægina and Delos; and Pliny records the competition in the quality of the material. In his Thirty-fourth Book he says, 'The most ancient honour was that given to the Delian bronze,—the next to that of Ægina. Myron used the former; Polycletus the latter. They were equals and fellow-scholars; but there was *emulatio*—rivalry—in the material each chose to use.' The mere list of names of the different kinds of bronze used is curious. There was the Corinthian, the Delian, and the bronze of Ægina; that of Tartessus, the 'æs Demonesium' the 'æs nigrum,' or black bronze, and the 'æs candidum,' or light-coloured, supposed to have been produced by mixing a large proportion of silver with it. There was also the 'æs hepatizon,' a dark-coloured bronze, of a liver colour, and others. The whole history of the metal-working of the ancients is interesting, from its rude beginning, in different kinds of 'hammer-work,' to its perfection, in the founder's art; and we learn from it how much study and careful thought the ancient sculptors considered it worth while to bestow upon every branch of its practice. At some future time, this class of art may, with great propriety, be made the subject of more extended observations."

On the proper treatment of *rilievo*, the remarks were extended and valuable; and the management of *alto-rilievo* and *basso-rilievo* in works of the early Revival, and of late and recent date, was duly commented upon, without, however, referring to the copies at the Crystal Palace. In contradistinction to the different receding planes, and diminution in the size of figures,—involving the absurdity of shadows falsifying the intention, as well as the want of atmospheric gradation,—he noticed the treatment of the sculpture of the Parthenon of the several varieties. The inadmissibility of some subjects, as, for instance, a front view of the Fighting Gladiator, for *basso-rilievo*; the advantage of representing profiles rather than front views; and the necessity for considering the intended position, the light, and other elements of the result, were well shown. On the same principle that we objected to features in certain designs at Westminster Hall, he asks how it is possible for a sculptor to represent falling rain, or a flash of lightning, or a rainbow; though equally with us he tolerates the *merely* emblematic or symbolic; and, saying that "a sculptor shows his talent and capability almost, if not quite as much, in the choice of his subjects as in the manner in which he treats them," he again urges that he must choose them, paying consideration to his *means* of illustration.

In the last of his lectures on Monday, the 8th, when he dwelt chiefly on the treatment of accessories, which he showed should never be made so important as to overpower the principal feature in the design, the lecturer said,—

I must, at the risk of repetition, again advert to the subject of the antique, in order that I may make clear the great ultimate object I have in view in undertaking the duties of the office I now hold. Though great stress has been laid on the value of the study of the ancient sculpture of the best schools, I shall have been misunderstood if it is supposed my aim has only been to show how the student may become a good academical artist; as if that were the end and sole object of all his study. I have, on the contrary, desired throughout to impress upon him that this is only a means to an end. The history of our art should be his warning here. I have wished to show that the repetition of mere classical and academical sculpture in modern days, even when practised by sculptors of the highest talent, has uniformly failed to establish a hold on the popular feeling, and to maintain its ground for any long period. As Art, there has been no indisposition to admit that there has been much in it that was excellent, as is seen in many works still existing, by the best artists of Italy and France—from Michelangelo, Sansovino, and others, downwards. But still the fact of its failure is undeniable; and there must, of course, be some cogent reason for the comparatively little interest that is felt in it. May it not have been because, not being real, but artificial, in its origin, it did not reach or appeal to general sympathy,—the popular feeling could not be warmed to it? It is, therefore, a subject deserving attention, whether it might not be possible to establish a school of Sculpture—pure, and simple, and expressive—which might touch modern sympathies, and attract the attention and the liking of the public. The refined scholar and connoisseur, and lover of classical poetry and imagery, might still be gratified with works which might occasionally be produced in illustration of ancient Greek subjects. But there are many who, from habit and feeling, have no sympathy with the usual mode of presenting classical sculpture, or whose education may not have prepared them to understand its subjects, who still are capable of being affected and improved by seeing subjects of which they can comprehend the meaning presented under beautiful forms. Even the most familiar need not be vulgar, nor does their treatment involve the necessity of low and common forms or bad taste. Genius and refined feeling can elevate the commonest subject, as may be seen in that most simple one of a 'Boy taking a Thorn out of his Foot,'—one out of many ancient works of the kind; and modern sculpture has, we know, successfully treated others of the same class. This may be carried still further in the illustration of subjects requiring deeper reflection in the artist, and capable, at the same time, of awakening corresponding sentiments in the people. It has already been effected once, and at a period in the world's history remote from classical feelings and classical associations, and when the artists had not the advantage of being acquainted with the masterpieces of the Greek schools to direct their studies and improve their knowledge of form. I allude, of course, to the Revival and Renaissance in the thirteenth and fourteenth centuries,—when earnest feeling threw into rude and untaught Art a quantity of expression that we in vain look for, in an equal degree, in any school of sculpture of any age? Why should not that which has been, again be? And, why should it not be effected by our own artists? Little more than half-a-century ago, England scarcely dared to count a sculptor Roubiliac, Rysbach, Schumacher, and many others, all foreigners, were alone thought worthy to be employed, and native aspirations were depressed for want of encouragement. Banks, Flaxman, Bacon, Nollekins, and others, at length vindicated the national capability of taking our place in the republic of Art, and have left works which take high and honourable place amongst the productions of modern sculpture. Why, then, it may be asked, should not earnest and well-directed genius again originate, in our time, new forms of thought that may have their illustration in consistent forms of beauty, adapted to the spirit of the age?

Such observations, along with the timely contribution to knowledge of principles which have lately been too little regarded, if pondered over and acted upon, will do much to remedy the defects before adverted to, in monumental sculpture, and conduce to the effective character of our streets and public places.

ART AND THE CHURCH.

"The most impenetrable panoply in which to confront error is the nakednes of truth."—Rev. Baden Powell, "Christianity without Judaism."

I HAVE no intention of entering on a purely theological discussion; and this I say, because, unexplained, the title of our subject might somewhat mislead, or be somewhat alarming to those who may dislike what is abstruse and dry. Although there is much division of opinion as to how far art is, or is not, entitled to a place in the church—although much needless fear has unhappily been elicited on this topic—yet it appears to have been seldom inquired into in anything like a dispassionate manner. We wish, however, to see whether common reason has anything to advance on the matter. It may be enough to say, that I do not advocate the views I hold in any factious spirit; for which purpose this at least were not the place, nor is it to be apprehended that any one will object to a free expression of opinion. With regard to whatever of religion may lie near our faith, I shall not (mindful of a certain saying) seek "to rush in where angels fear to tread;" but if our subject sometimes brings us within view of the celestial gates, I feel sure that (as it is necessary to our subject) I shall be forgiven; and it becomes therefore unnecessary to apologise.

It might perhaps have been more philosophical, and doubtless more imposing, to have put forward certain very lofty terms in the van of our subject, and much might be said in favour of the word "æsthetic;" but, in general, most of these terms are very mysterious, Kantian, transcendental. The moment one enters within their sphere, confusion of mind begins—general indefiniteness prevails. We have perhaps to consider ourselves as entities, and not men, and to pass our time wandering about the labyrinth of some gigantic Ism or other, equally unable to proceed or retreat with certainty from a region of difficulty and delusion. But it is better to be a man than an entity, or any other abstraction; it is better to understand than to be blest with suggestive perceptiveness; for in this part of the mind's world, all the words are of Preadamite dimensions,—they are the megatheria and saurians of speech. They grow to an unwieldy length, so much so, that it is a question whether many of these voluminous monsters of obscurity are anything more than mere developments of polysyllabicism—names without objects, just as there are objects without names.

Avoiding these then, we wish to inquire whether, in the worship of the Most High Creator, we are justified in availing ourselves of those noble arts which are the consolers of human life, the lovely companions of the human mind. I believe that the affirmative can be distinctly proved. On the other hand, if reason can show that, to whatsoever else open, the gates of heaven are closed against the arts, there ensues an end to all noble architecture and music, and the dreary reign of sloth and slovenliness begins. But it is proposed here to set forth that the arts and their development are congruous with the nature and faculties of man. That, as it is natural to man to worship, so, in worshipping, he must engage those faculties and the means suitable to their organization. We shall show how, by the operation of this very process, the arts have been maintained and fostered. We shall prove also that the arts are indissolubly connected, and that the plea for the employment of one holds good for the adoption of the rest. And we shall also endeavour to state those principles which, in the higher and grander public offices of life, such as those of religion, appear best fitted to guide and purify our taste.

It has no doubt been esteemed a very fine thing to pursue, even under difficulties, the stoical sublime. Very possibly grand is it to crush out all the gentler feelings of the soul, to look upon simple affections as personal foes, and to cry in a dreary manner that all is vanity. But this may be pushed to a morbid unhealthy point, and it is often forced to an ascetic conclusion. It is more Solomonian than Christian. When we are in this condition, we are apt to declaim long and solemnly about the dreadful nature of man. Man. "His last and fairest work,"—

> "Who trusted God was love indeed,
> And love creation's final law,"

becomes in our eyes—

> "——— a monster then, a dream,
> A discord. Dragons of the prime,
> That tare each other in their slime,
> Are mellow music matched with him."

We tremble at the tyranny and hostility to our peace of the senses. The mind becomes haunted, dogged by them as by five "frightful friends." We bewail the insignificance, the nothingness of everything around; we talk in whispers about eternity, immensity, infinity, or else about ruin, thunder, fire, and woe; and, generally, we are always meditating on misery, and devices of misery, and proceed to make ourselves as miserable as we possibly can. With the greater part of this coldness and supposed depth I have now nothing to do. The state of mind alluded to, though it has been much cried up, is for the most part a delusion altogether, if it be not worse. But it suffices to call attention to the awful denunciation of the senses with which this frigid school is for ever resounding. There must clearly have been an error somewhere. Man (miserable creature!) could never have been intended to have eyes, ears, and nose, if this school be right; to possess the senses, sight, hearing, smell, touch, taste; to have been endowed with a brain and nerves (special nerves) corresponding to and mainly to be influenced by those senses; to obey, and sometimes to wield, a power expressly made, and fitted to reflect on the sensations derived from such gross, such evil channels. But, in spite of this, we must accept the very evident fact that he was intended to have them, because they were given to him. They were given to him in order that he might employ them, not here or there, not to-day or to-morrow, but everywhere and always. Nature, be assured, is no Dejanira, nor the senses a Dejanira's gift to man. For the mind can receive no report of the external world without the aid of these senses. Just, for instance, as the eye and the ear are to the brain, so are sight and hearing to the mind. As the eye is to the ear, so is sight to hearing; as sight is to hearing, so are colours and forms to sounds and tones, combined. And as sight and hearing are to the mind, so are the arts of painting and music to the understanding. I am speaking now as to the effect produced from without. But when we turn to creating in art, a like relation holds. For the painter beholds all the beautiful images of his work with the eye, that is with the visual faculties, of the mind (which are, in this case, originally much dependent upon, and instructed by, the external organ of sight), and with his understanding he reflects, arranges, and combines. The musician, also, hears his Songs without Words by the ear of the mind, and the faculty most engaged is especially that most conversant with sound, the memory and imagination of sound, and chiefly connected with the external organ of hearing. So that the chain ascends from nature to the mind, and descends from the mind to nature. There is continual action and reaction; *flection*, so to speak, and reflection. For (to pass over technical acquirements, the practice of the hand and the like) a man first learns an art through an organ, a sense, and the brain, by the mind and understanding. The understanding reflects, improves, and invents; and in turn creates in art from the mind, and appeals, by the converse process, to the minds of all. Every generation records its progress, and adds something to the knowledge of its predecessor. Thus art is founded upon nature, and the light of experience. But science has been of a much more tardy and more gradual growth, and the senses are here much less certain guides, if guides at all. Art precedes science in the order of development; and the fine arts had reached to extraordinary excellencies ages before the right method of proceeding in science was even truly investigated. And several mechanical arts of daily life, the "heavenly motions in astronomy, and harmony in music, and the letters of the alphabet," were almost of primæval discovery; but the inauguration of the true processes of science dates only from about the time of Bacon. The powers, therefore, in virtue of which man has created the works of art, are essentially part of his being, inseparably mingled in the tissues of the mind's life. Poetry, painting, architecture, are all natural. They arise, moreover, from natural gifts and desires, and no more possess in themselves the nature of evil than do sight and hearing, eyes and ears, touch and taste, or, indeed, any of that wonderful and fearful structure called man. As long as some can paint, build, or compose, as long as others can hear, see, or feel, shall these noble arts be practised, as from the earliest times they have been, to adorn and civilize the world. The universal consent of ages is in their favour; they are as venerable as those twin nurses "Use and Wont;" they were the delight and glory of the ancient peoples, as they are to-day of the modern; they are kept alive by means of the highest aspiration, by an intense longing to attain to true conception and expression of beauty and grace; they have been reared by a laborious creative being, the work of his hands, the delight of his eyes, the embodied emanations of his intellect. How little reason, then, is there in regarding the arts as something dangerous and basely seductive; as glittering tempters fashioned in wrong; as syrens singing from an evil isle. Yet have they by mankind been ever invested with an almost sacred character: they were the handmaids of the gods in Egypt and the primæval East; with divinities they dwelt in their own majestic temples in Greece and Rome; they took refuge in Christian Byzantium when the North arose to conquer; they were kept alive and fostered in Europe by monastic institutions, which on this ground alone (like Leo X. and the Medici generally) are deserving of the eternal gratitude of mankind. At a later period still we see the arts growing with the growth, and strengthening with the strength, of the Christian Church. We observe the rise and development of Gothic architecture in the North, and in the South we find the sacred shrines become a refuge for the works of painting and sculpture. It would not, therefore, be too much to say, that, from first to last, the arts have been fostered and maintained by Religion, and sheltered in their need at her feet. They were born in the temple, bred in the sanctuary, developed gloriously under the very shadow of the Cross.

We observe, then, that both the nature and history of man concur, as to the development and employment of the arts in the offices of religion. There is no occasion to make a trite enumeration of the most majestic edifices in the world, and to show that nearly every one is a temple raised either to the true Lord of man, or to some deity the worshippers presumed to be so—some name they supposed to be His. In every age history shows us the sacred sisters sitting at the foot of the "great world's altar stairs, that slope through darkness up to God."

The arts, too, are closely allied as to their principles of composition. It is natural to imagine that architecture, being an art of design, is more closely related to painting and sculpture than to poetry and music. But although all are more or less dependent upon similar principles, the resemblance lies closest between architecture, music, and poetry. These are all creative. They command the widest range of expression, and allow of the greatest freedom of choice in the artist. In these, all his ideas may become embodied; may assume the form his free mind stamps upon the materials of his choice; and, so combined together, no longer airy nothings, but, possessing local habitations and names, tell forth their wondrous tale. Language possesses rhythm and metre, vivid and noble imagery,—the most touching, most telling, means of expression,—and these in unison form poetry. Music possesses sounds obedient to rule and measure, and expresses in characteristic accents the passions and emotions of the mind, both good and bad, divine and human. Milton describes the angels marching in heaven as accompanied by music; and perhaps Beethoven's march at the end of the C minor symphony would not have been unworthy of the occasion. All will call to mind how,—

> "The bright seraphim, in burning row,
> Their loud uplifted angel trumpets blow,
> And the cherubic host, in thousand quires,
> Touch their immortal harps of golden wires."

Although these harps may be too substantial, the value of Milton's authority arises from his being in many respects a Puritan of the Puritans, who nevertheless delighted in poetry, music, and architecture.

All poets have celebrated the many-sounding organ. Dryden's Cecilia "drew an angel down," and so might his own Ode too. To take an instance from it, on the *un*angelic side:—

> "Sharp violins proclaim
> Fury, frantic indignation,
> Depths of pain, and height of passion,
> For the fair, disdainful dame."

But it is needless to multiply examples from writers of all shades of opinion, to show that "in harmony—in heavenly harmony—this universal frame began;" and there are many which refer alike to all the arts. Music connects and combines these sounds—her words—together in melody of "linked sweetness;" she enters the soul by the gate of hearing, and speaks to it with a voice that is no servile echo of the voice of Nature. Architecture deals with material parts, which she submits to the laws of proportion, and arranges in harmonious taste. These are her words and sounds, and with these she recites her poem, or symphony in stone, in the length, breadth, height, and proportionate divisions of the palace or the cathedral. She lends a material shape to the greatest ideas of the mind. For architecture is particularly expressive of power and sublimity; her appeal is to the eye, and, through that, as music through the ear, she addresses the mind. The greatest works of music, poetry, architecture, possess alike an exhaustless beauty; they render us continual delight; and gaze, read, listen as long as we may, we never leave them but unwillingly. But rather, we ought to say we cannot leave them; for they follow us everywhere; we hear their airy voices, and their shapes arise before us even by "sands and shores and desert wildernesses." Thus, then, between these three (architecture, poetry, and music), we may have observed a very close analogy. Architecture, painting, and sculpture alike require a cultivated eye, and the taste that arises from careful observation and careful comparison, whether of Nature or of works of art. Every noble and beautiful object leaves as it were its photograph in the mind. The gallery of a richly-stored memory becomes often a powerful seat of taste.

The eye and memory of the sculptor are continually at work; and his art may contribute to architecture a more immediate knowledge of forms of beauty, a more ready habit of accurately estimating proportions, and, consequently, of effecting better combination. To sculpture, painting adds perspective and a judicious harmony of colour. The charm effected by her secret of contrast also is well calculated to moderate in theory the severity of proportions, and the mathematically strict principles of construction necessary to architecture: and thus may all the arts find assistance in each other. They proceed on like, and sometimes common, principles; and these, but few in number (however varied and numerous the combinations that have resulted from them), are the very source of all that order, grandeur, and harmony which together constitute beauty.

In all, the observation of Nature is of the highest importance. The arts are all dependent upon her; and must all conform to her laws:—

> "Nature is made better by no mean,
> But Nature makes that mean; so, o'er that art
> Which you say adds to Nature, is an art
> That Nature makes."

And so of each of the arts we may say,—

> "This is an art
> Which does mend Nature—change it rather, but
> The art itself is Nature."

I think it is sufficiently shown that the arts are so closely allied, that their virtues and vices, so to speak, are common to all of them. That if to be approved, they are approveable on the same ground; if to be condemned, condemnable on the same ground. But it is very clear, although like everything else, they may be abused, that there is essentially no evil about them. Our inquiry has shown that to understand them, the student must seek for the principles of the sublime, the beautiful, and the harmonious. They depend entirely on those laws by which the Creator himself has fashioned the world. They employ the material He has given; imitate the forms He has adopted; array themselves in the colours of His work. His is the hardness of the granite, the smoothness of the marble—His every beautiful shape. His the light, and the laws of light, which invest all works with various hues; that give expression alike to the landscape and the grandest structure; that allow us the blessing of sight by means of an organ made by law, in direct conformity with the laws of objects about us. From Him we learn height, breadth, depth, proportion. We are fitted to observe them, having senses adapted to the purpose; His work and our senses, and the arts through our senses learnt from His work, are assuredly not evil, though we may make evil to ourselves from the abuse of them. Man has ever been a worshipper, whether a saint, a savage, or a sage. Is then the worship of this creature, endowed corporeally, intellectually, spiritually, to be the worship of the whole or of the part? Is it to be only corporeal, only intellectual, only spiritual so called? The first tends to make religion consist in the Hindu agony of self-torture; the second, to cause that abstract speculation and mysticism, to indulge in which men make a Pantheon of their own dreams; the third, as if in vindication of the neglect of all warm and genial feeling, to engender a calm, perennial chill of soul. But this attempted division of an indivisible being—this separation of things by nature inseparable, is against reason and against truth. The worship of man must evidently be of man as a whole; whence it follows immediately that the intellectual faculties are as much concerned in worship as any other part; that that cannot be complete worship in which they have no share; that if the intellectual faculties are thus bound to the service of God, then are their production, their natural modes of expression,—as, among others, are the arts,—bound to be exercised to His glory and honour. Thus, the chief privilege of the man of art, as of the man of science, is to express his gratitude for the sublime gifts bestowed upon him, by means of their devotional employment; and this term devotional employment should be understood in a very wide sense. For, indeed, whatever of our work tends to raise and improve the minds of our fellows, does good service in the cause of religion; and may, just in the degree in which it so acts, be termed sacred. It is indisputable that the greatest achievements of the arts in poetry, architecture, music, and painting have been performed directly and professedly with a religious object. It is, then, the highest and noblest province of the arts to serve the Creator. It is so by universal admission for music and poetry; therefore for painting, sculpture, and architecture. For all these are intimately connected to such a degree, that much architecture is little else than music transferred into stone, and much painting nothing but poetry in colours. They vary but as the senses; they are the expression of one human mind in different languages, the children of one goddess clad in different robes. Therefore, there is no reason in separating them, and in saying we will have architecture and music in our worship, and no others. We might as well say we will have eyes and no ears, ears and no eyes. The same arguments lie for and against them all; their effects only are more or less direct and palpable.

We perceive, then, how closely the arts are allied. History shows us how often the great Italians combined the mastery of several at a time. And one is led to believe that in those days men understood some general principles of art, generally viewed, and which they were able to apply to any branch of it. And possibly these branches are more supplemental to each other than we altogether realise. Here there is still too much of the old monopoly spirit. Because a man is an architect, *therefore* he can know nothing of painting; because a painter, *therefore* nothing of architecture; and so on. But these therefores have very little truth or reason in them. On the contrary, the more thoroughly a man learns to trace the principles of art in its different developments, the better will he succeed in his own specialty; and the better he understands his own, the more likely is he to appreciate the real art. For these principles are, as has been said, very similar, almost identical, and must be equally observed in designing a building, or composing an oratorio or a poem. It is at this point, this process of development of principles into systematic shape, that art begins to change into science. "Principles are not to the artist direct objects of meditation. They are secret powers of nature, to which the forms which tenant the world owe their constancy, their movements, their changes, their luxuriant and varied growth, but which the artist can nowhere directly contemplate. They are unseen guides leading by invisible strings through paths where the end alone is looked at. But science directs our vision so that these airy ties become distinct objects." Indistinctness of ideas, we read, was first remedied among architects and engineers. The honour of this belongs to the painter and engineer Leonardo da Vinci, especially as regards the laws affecting the lever. In his remarks Leonardo observes that "Theory is the general—experiments are the soldiers." Lord Bacon has similar statements. Nature is the true teacher of men of genius; or, as Dr. Whewell (above quoted) says, "Experience and nature are the writing, and the intellect of man the interpreter."—(Whewell, Philosoph. Induc. Sci.) From all this it results that it is useful for the man of art (and especially the architect) to strengthen his scientific powers.

Public worship partakes of the nature of a national ceremony. It exacts, therefore, at least as much decorum and appropriateness as any other of our public acts. One would say that certainly no less care and reverence befit those who approach the temple, than those who wait upon the throne. We have seen that it has ever been the highest privilege of individuals to devote their art to the worship of the Deity. The poet, the architect, the musician—all have claimed and exercised this privilege; but the architect, the musician, the poet, the painter, the sculptor, are of us and among us. They belong to us, and we warmly assert their greatness and their glory. For us the mind of Wren still lives and broods in St. Paul's, the genius of Milton shines in every library, the spirit of Handel leads the overwhelming chorus of praise. The names of these men, and their brethren in art abroad, though their visits were those of angels, are familiar in our mouths as household words. We have adopted the very life and colour of their thoughts,—we must also adopt their responsibility, and lovingly discharge the sacred debt of gratitude they owed for their marvellous gifts, and that we, who have been soothed, taught, and elevated by those gifts, shall owe for ever. And in what better way can we make acknowledgment than by the use of the very highest efforts of our arts in our public acts of adoration? What is more natural, what, in the ordinary passages of life, would be more graceful, than to express your thanks for a valued gift, by means of that very gift itself? The grateful mind, that "by owing owes not, but at once repays, indebted and discharged," must surely make some sign that it *is* grateful. Were there a king of all the world, who should give any of us some estimable order, should we go into his presence without wearing it? And as there is (in a much higher sense) such a monarch who has bestowed upon us the arts, far more priceless than stars and ribands, shall we go into His court,—His church, without them? Consider the very example of these men, on whom Heaven bestowed heavenly minds for our instruction. Did they offer of that which cost them nothing? Is there in the "Paradise Lost" one single resource of the poetic art left unemployed, and that, too, of the very choicest kind? This blind, neglected, lonely bard, was no sensualist, no idle dreamer, no lukewarm worshipper, in need of excitement. But he had thought of endeavouring to justify the ways of God to man. He invoked divine Urania and verily she heard in heaven, and came down. This great man did not say to himself, "O, my master is infinite; the best I can do will be nothing in his sight; therefore there is no use taking any pains about it." Had Milton been an architect, is it to be supposed he would have acted differently? Would he have built barns for the worship of God? Would he have chosen a bad style, worked it out clumsily, and revelled in compo and shams? Had Handel been a poet, would he have been contented with tame or timid diction, false imagery, indifferent grammar? For whatever name we use, we designate only the same human mind in another form. There is the human mind Newton, the human mind Milton, the human mind Handel, the human mind Angelo. The human mind is like a diamond in the hand of Time, being indeed one, but exhibiting different colours as he turns it in the advancing ages. This mind, in all its phases, has solemnly and incontestably lent its sanction to the principle, that in treating of those matters which concern the Most High, the noblest efforts of the art, chosen as a vehicle of expression, shall be called into play. The "infinity" school, the "best-will-be-nothing" school, the "not-taking-any-pains" school, in short, the school of the Buried Talent,—cold, discouraging, and inert,—would never have given the world a single art, nor have begotten a single art-mind.*

H. T. BRAITHWAITE, B.A.

* To be continued.

AMERICAN CHIPPINGS.—SCHOOLS.

THE first railway ever constructed in the republic of Venezuela has been opened for passenger traffic, and steam communication had with the interior. The event was celebrated by a gathering of "the wealth, fashion, and intelligence" of the country.

The Brooklyn public school-house, recently destroyed by fire, whereby seven children were suffocated and several injured, out of a school of 800 pupils, was erected in 1853, at a cost of 17,000 dollars, at the corner of Concord and Navy Streets, opposite the City Park. The loss is total, there being no insurance; and this case adds another to the list of fearful calamities almost daily occurring, owing to the want of proper provision for free exit in case of accident, a precaution frequently and earnestly urged in the pages of the *Builder*. The building was of brick, three stories in height, the basement being used as a play-ground. On this floor, also, were the heaters, three in number. The second story was devoted to the primary department, and the third story to the grammar-school. Both floors were divided into eight apartments, connected by large folding-doors. The frontages towards Nassau and Navy Streets were similar, viz., 97 feet. In the former was the main entrance for visitors, with stairs 8 feet in width; leading therefrom, also, an entrance to the female department, and in the latter one from the boys' department, 6 feet in width. The fire was first discovered in the primary department (first floor); and on one of the children crying out "Fire!" a tremendous rush was made, but the teachers of the girls' school succeeded in handing them out safely. Not so, however, with the boys: the stairs became choked, and the killed were between six and seven years of age, death having been occasioned by the trampling and suffocation—*not one burned*. The fire originated near the girls' entrance, and was occasioned by the overheating of a flue.

Our Trans-Atlantic friends have devoted much time and study to the designing of scholastic buildings; and many important buildings of this class have been executed, amongst which we may particularise those at Hartford, Conn.,—Octavius Jordan, architect,—cost 1,800 dollars,—Italian in character, with a belfry serving as a smoke and ventilating shaft likewise; Washington village, town of Coventry, Rhode Island,—cost 2,300 dollars, is two stories high, has a library of 400 volumes, and is considered one of the best school houses in Rhode Island; the Union School-house at Woonsocket and Chepachet, Rhode Island,—cost 7,000 dollars,—Mr. Teft, architect, and has a library of 900 volumes; Public High School-house, in Warren; Public School-house at Providence,—an important structure, with chiselled granite stone basement, and superstructure of Danvers's pressed brick, roof of *tin*, painted,—general dimensions, 76 feet by 50 feet,—*three* stories high, denticulated projecting cornice forming eave, pedimental ends, and containing a lecture-room to accommodate 250 pupils, progressive school-rooms for both sexes, &c. &c. Public High School-house, Salem, fitted up very completely, and combining English and Latin schools. An appropriate species of decoration is introduced here in the ceiling of the English lecture-room, which presents the circle of the zodiac, 29 feet in diameter, a ventilator, 3½ feet in diameter, representing the sun and the spots upon the nucleus, the divergence of the solar rays, the four seasons, the equator, tropics, and polar circles, all fully indicated, as we mentioned some time ago. In the angle panels of the square which incloses the circle, and on the four sides of the room, are also astronomical subjects. At New York, the Public School Society has done much; and we find in Twenty-fourth Street, between Seventh and Eighth Avenues, a school-house, with a frontage of 54 feet and 95 feet in depth, designed by Mr. T. B. Jackson, architect. The staircases afford ample means of egress, and are constructed to provide against accidents. The same architect has also built another structure at the corner of North Moore and Varick Streets, with a primary department for 300 pupils, two departments for 500 girls of different ages, and one for a similar number of boys, and having frontages of 87 feet and 75 feet respectively. The Free Academy, however, is the most important structure noticed yet, its general dimensions being 125 feet by 80 feet, by 65 feet to eaves, and to top of towers 110 feet. Style, Gothic of the fourteenth century, five stories high. Its principal apartment is the great hall, 125 feet by 60 feet, with open roof and carved ribs. Mr. Renwick was the architect. In addition to the foregoing, we may remark, *en passant*, the Primary School-house at Boston, three stories high;

the Bowdoin Grammar School-house, 76 feet, by 55 feet, and three stories high, Mr. Bryant, architect, who also designed the Quincy Grammar School-house at Boston, 80 feet by 58 feet, four stories high, and cruciform on plan; the Putnam Free School-house, same architect, and the Grammar School in Philadelphia, 82 feet by 66 feet, Mr. S. Sloan, architect; the Public High School, in the same city, and a variety of others, too numerous to notice; but the principle of having school over school appears to be carried out through America, and in some cases with a *vengeance*. Peculiar attention, however, appears to be paid to classification, fittings, and ventilation; and many valuable hints might be taken from the general arrangements, though by no means faultless in many respects.

The new plates for the treasury notes, ordered from Philadelphian and New York artists respectively, are said to be magnificent specimens of the graver's art. The head of the President will adorn the 1,000-dollar notes, and the 500-dollar ones.

The harbour of New York is getting filled up to a serious extent by deposits, and it is said that, on the representations of some engineers, the Government is about taking steps to clear it.

The American Telegraph Company now sends despatches from both ends of the line, and simultaneously, by a *single* wire, the electric currents meeting and crossing, but causing no irregularity. Two ordinary cells of the Grove battery are used. This is the invention of a Mr. Hughes.

The Pacific Railroad Bill is matured, and the line will pass between the Big Sioux and the mouth of the Kansas river to San Francisco; alternate sections of land to be granted, and 12,500 dollars per mile advanced on the completion of every twenty-five miles of the road until 25,000,000 dollars be reached.

A new city hall is proposed to be erected at New York, and a bill for that purpose has been applied for to the Legislature. It is also proposed to erect an inebriate asylum at same place, and to appropriate 50 per cent. of the Excise moneys towards the expenses.

Fire companies in Philadelphia are now purchasing steam fire-engines. Two companies are fully provided with them already.

In Baltimore a suit has been instituted against a "gas company" for *retailing whiskey* without license, it being put into the metres, to prevent freezing, and the consumers charged for it.

A "dummy engine" has been placed on the city portion of the north Pennsylvanian road. Its progress, it is said, is unattended by noise, and the construction such that it can be stopped in an instant, even when progressing at its highest speed. The invention is by Jos. Harrison, jun. of Pennsylvania, and essentially different from anything hitherto known.

The lake end of the Pontchartrain railroad is about half destroyed by a tremendous storm that lately swept over New Orleans.

The snow fence on the Central railroad has been set for seventy-eight miles, and cost 130,000 dollars. The posts are of oak, set 3 feet in the ground, and the boards are about 10 feet high.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

On Monday, 22nd inst. a meeting was held at the Rooms, in Grosvenor-street, Mr. Scoles, V.P. in the chair.

A letter was read from Mr. John Bell, sculptor, presenting to the Institute photographs of an obelisk and fountain, designed by him, to commemorate the Great Exhibition of 1851, with suggestions as to the introduction of the entasis in obelisks.

The Hon. Secretary read a memorial that had been adopted, with reference to the recent competitions for the Government offices and barrack accommodation, which we have printed elsewhere.

Professor Donaldson announced that there would be a scientific congress at Paris from the 5th to the 15th of April, and that M. Caumont, of Caen, had invited the Institute to send delegates to meet others from various continental cities. Many subjects would be discussed, and among them some that would be interesting to the Institute, and the architectural profession generally. He thought it would not be quite within the province of the Institute to delegate any gentleman to attend this congress, but if any of the members were disposed to go to Paris on the occasion, he would personally be happy to give them an introduction to M. Caumont, who, he was sure, would give them a cordial reception.

Mr. Digby Wyatt then read some "descriptive particulars and critical remarks, on the remains of the Abbey of Kilconnell Abbey, Ireland," by Mr. James Blake, architect; the paper (which was illustrated with well-executed drawings and detailed plans), being the one to which the Institute at a late meeting awarded a medal and five guineas.

Professor Donaldson, initiating a discussion, said he rather differed from Mr. Blake in the conclusion that foreign influence had affected the designs of the abbey and other works in Ireland of a similar class, and in doing so referred to drawings he had himself made in a recent tour through Ireland of the Abbey of Kilmallock, and which were remarkable for their identity in plan and design with the characteristic features of Kilconnell. Both these abbeys were constructed of similar materials—the black limestone, found in the county, and which was susceptible of a high polish, but its colour being almost black, rendered it unfavourable in an architectural point of view, as not being sufficiently relieving in its effect on the landscape and surrounding objects. He (the professor) hoped that the effect of this paper would be to induce other young men in Ireland and Scotland to produce equally desirable illustrations of the buildings of their respective countries.

Mr. Nicholl suggested that instead of these buildings having been influenced by any foreign taste, they were rather late imitations of early works executed from memory by persons who had seen them abroad, and referred to various buildings in Ireland in support of his hypothesis.

Mr. Wyatt observed that the Mediæval buildings he had seen near Dublin, presented decidedly English features; and was of opinion that the originality that characterized these buildings arose from a want of knowledge of other styles.

Mr. Nicholl added that the spire in Ireland, from the circumstance of its being considered an English and Protestant feature, was seldom adopted.

Mr. C. Barry congratulated the Institute on having developed in the present and past papers the architectural antiquities of Ireland, which had received far less attention than they deserved, and the value of which had yet still further to be developed, though it was hardly fair to judge of the merits of the greater works of Ireland from the isolated though highly interesting specimens that had come before them.

ROYAL ENGINEERS *versus* MILITARY ARCHITECTS.

CONDITION OF BARRACKS.

Since I last occupied a portion of the *Builder's* pages by a few observations on the above topic,* the attention of the public has been more fully drawn to the subject, and the verity of my statements proved by the Commissioners' report and your own investigations on the sanitary condition of our military establishments.

The startling fact that we annually sacrifice 2,500 of our devoted soldiery upon the altar of ignorance or official routine, cannot be contemplated without exciting a corresponding amount of disgust for the most ineffectual, enormously expensive, and ridiculously cumbrous Engineer Department, whose past working has brought about these disastrous results, and at whose door the blood of its victims must now be laid. Will a nation that so eagerly responded to appeals on behalf of the Crimean or Indian sufferers, or that employs its power to sever the chains of the African slave, look without sympathy upon this subject, and continue unaltered a system proved to have destroyed so many of our bravest sons by means, perhaps, less revolting than the savage massacre of Cawnpore, but, nevertheless, equally odious in our eyes and certain in its effect? That the evils complained of are traceable to the ill-arranged and badly-ventilated barrack accommodation we cannot for a moment doubt, when we consider the facts now made known by the Commissioners' report. It is not possible to preserve health in such apartments as have been illustrated in late numbers of the *Builder*. There is evidently no exaggeration, and they might be taken as examples of a large portion of existing barrack-rooms, which are generally as ill-constructed and equally calculated to spread the contaminating influences of disease. I have seen *four families* stationed in one barrack-room!! the floor of which was *below* the level of the surrounding ground, and the only light or ventilation it received was from a single window which opened into a small yard where the soiled bed-clothes from the hospital and dead-house were frequently washed—and this, too, in a barrack where the Royal Engineer officer—without a family—occupied quarters sufficient to comfortably lodge at least thirty or forty men.

I have also known soldiers to be obliged to stop up holes above the skirting of their barrack-room, when retiring to bed, that their rest might not be disturbed by a number of *rats!* that infested the place from a neighbouring sewer, making way at the same time for the passage of those deleterious gases which are naturally generated at the same impure source. But we need not multiply such instances: it is sufficient to know that, with few exceptions, every barrack in the kingdom is most defective, and that notwithstanding the enormous amount annually expended through the medium of the Royal Engineer Department, there is not that improvement manifest which the public has a right not only to *expect*, but *demand*. As a nation, we liberally provide means sufficient, in judicious hands, to maintain our military establishments in a state worthy of our position amongst other nations; and it is a sad reproach to us to find that means in the hands of improper or incompetent officials fail to accomplish the end desired. At present the majority of our barracks might be defined as irregular piles of buildings thrown together, without order or arrangement, disregarding even the ordinary requirements of those who are expected to occupy them; and we fear they must continue as such, if there is not forthwith a well-digested scheme for the improvement of *each barrack*, laid down as the groundwork of all future building operations, which operations should be carried out in the furtherance of this scheme, so as ultimately to secure its perfection. And there must be competent persons entrusted with carrying out the details, and responsible for the proper fulfilment of such a scheme, who should *permanently reside* in the neighbourhood of their charge; unlike the Royal engineers and their civil staff at present, liable to be shifted about to all points of the compass, which in a measure removes their responsibility, as they cannot be expected to be answerable for defective barrack accommodation at stations where they have not remained a sufficient time to enable them to acquaint themselves with existing defects, or suggest adequate improvements; or their energies may be cramped by being bound to the "regulation pattern;" or, as it often happens, their suggestions may be cancelled, when submitted for approval to a series of officers, from their own rank, up to the highest "authorities," few *if any* of whom could possibly justly estimate the necessity of the project, being personally unacquainted with the circumstances that called it forth.

Let me, then, in conclusion, again urge the necessity of removing the Royal Engineer officers from their present civil appointments, and substituting professional men in the capacity of military architects, who will have permanent charge of the military districts, and be *directly* and individually responsible to the inspector-general for their proper maintenance, without that circumlocution of official red-tapeism which now usurps the place of independant professional knowledge.

C. E.

* Vol. xv. p. 726.

MEMORIALS AND MONUMENTS.

Proposed Memorial of the Great Exhibition.—A deputation of the committee, consisting of the chairman and the two honorary secretaries, attended the Chief Commissioner of Works, Lord John Manners, on Monday last, and made a formal application for leave to erect the proposed memorial, or such modification of it as may be arranged, on the site of the Exhibition building, in Hyde-park. The Chief Commissioner entered fully into the matter, and promised attention to it. The committee have announced that the exhibition of the designs will close on the 10th of April.

Memorial of Princess Royal's Marriage at Banbury.—The committee appointed to consider the memorial to be erected in honour of the marriage of the Princess Royal at Banbury have decided to erect a cross and fountain combined, in the Horse-fair, where the roads meet. Several designs have been exhibited, but that of Mr. Gibbs, of Oxford, architect, has been selected. It is in the Decorated Gothic style, and the height about 50 feet. There will be six niches filled with statuary, and three semicircular basins will receive the water which is to flow from the conduit. Mr. E. Hutchings having offered to exhibit some stereoscopic views in aid of the funds for erecting the memorial, the offer has been accepted with thanks.

Statue of the late Duke of Devonshire at Derby.—It has been determined to erect a statue of the late Duke of Devonshire in his county town of Derby. Should there be any surplus funds, they are to be devoted to some charitable purpose, such as the late duke would have approved of.

The Rutland Memorial, Newark.—The plan of the parsonage for All Saints' parish resolved on as a memorial of the late Duke of Rutland, will comprise a front of two tower sides, and the centre formed by a large tablet, surmounted by a monumental tower or spire (?)

The Morley Monument, Newtown.—The monument, erected by subscription to the memory of

the late Mr. Arthur Thomas Morley, proprietor of the Newtown-hall property, has been placed on its site over the grave of that gentleman, in the Newtown churchyard. The monument is an obelisk, standing about 14 feet from the base, in freestone, ornamented. The execution of the design, and the erection, were entrusted to Mr. Edwards.

The Brotherton Memorial.—The subscriptions amounted to 2,532*l.* of which 600*l.* have been paid Mr. Noble on account of the statue to be placed in Peel-park: Mr. Noble will receive 1,000 guineas in all. There is a balance in hand of 1,870*l.* The interest on the surplus will be expended in books for the public libraries of Salford and Pendleton. Mr. Noble reports that the statue is steadily progressing at the bronze foundry, and that he expects it will be quite completed, and fixed in Peel-park, by the 1st of May next. Messrs. Holmes and Walker, the architects of the memorial for the cemetery, state that the carving and labour upon the monument are progressing satisfactorily, and that they expect the monument will be ready by the 1st September next.

Sculpture for the Public Parks.—In the House of Commons, last week, Mr. T. Duncombe asked the President of the Board of Works whether, in the event of any offers of sculpture, as approved specimens of the fine arts, being made, by way of gifts, to the nation, with a view to their being placed in the parks, any objection would be raised on the part of the Government to their acceptance. Lord J. Manners replied, that if any public-spirited individual made such an offer, he should be prepared to take her Majesty's pleasure upon the subject. At the same time, he should recommend the acceptance of none but really meritorious works.

The Washington Monument at Richmond (U.S.).—The inauguration of the Washington monument, at Richmond, took place on the 23rd of February last. There was a procession, a banquet, and an oration.

LONDON STREET TRAFFIC.

THE system referred to by your correspondent, "R. M. Major," in his letter on "Street Railways for London" (p. 185), is, I presume, the one patented about the year 1821, by the late Mr. H. R. Palmer, who was some time engineer to one of the dock companies in London. I think he intended it for comparatively slow and heavy traffic; but it appears to possess peculiarities which, if developed, would not only render it available for the leading street traffic, but also for cheap and comparatively quick communication in many parts of the country, where costly railway works would not pay for carrying out, so little land is required for it; in fact, just width enough for a bridle way on each side the rail, to work it with horses, at a sharp trot. It has struck me as being so far capable of development, especially for the country, in various ways, that I have been on the point of addressing your journal, more than once, upon the subject, since the "street railway" system has been in agitation. One difficulty attending its application to the London passenger traffic, would be the constantly varying load: this, however, might possibly be overcome on looking closely into the question. The mode of traction suggested by "R. M. M." would, I think, be inadmissible, from the great noise of the friction-rollers, both before and after the passage of carriages, alone.

I think it possible the atmospheric principle would be the most manageable; and, if this were used, the rail for the carriages to run on might be placed on the top of the tube, and partly supported by it. But I think after all, horse traction would answer every purpose, as a very fast rate might be attained by this means from the easy draught, at the same time taking a large number of passengers; and the horse or horses might run in advance of the carriages, on a light platform, about 6 feet wide, fixed sufficiently below the rail, to let the flanges of the wheels have full play for any side motion, owing to unequal loading. There would be a slight platform at each of the supporting columns, level with the bottom of the carriages, with steps from it to the level of the street. I would then suspend the carriages (which should have only one seat longitudinally), with the backs outwards, so that doors might open from a narrow passage, running the whole length of the carriage, towards the above platform, for the egress of passengers.

I also thought a footway-crossing might be combined with this plan, at the intersection of all the leading thoroughfares, the danger of the present crossings to the aged and infirm being so often the theme of complaint at the present day. The telegraph and lighting might also be combined with the structure.

HENRY L. PRICHARD, C.E.

THE ECLIPSE.

A GLANCE BACKWARD AND FORWARD.

Thousands of years have rolled away
Since from Chaldæa's awe-struck plain
A deep gloom chased the light of day,
Remain'd awhile, then fled again.

Her wise men watched with eager eye
The leaden shadows close around;
The dark'ning, dim, descending sky,
That well nigh seem'd to touch the ground.

Then, as the heavy curtain cleared
From off the broad disc of the sun,
Soft, varied rainbow tints appear'd,
Chasing each other one by one.

And when the solemn scene was o'er,
The Sabæans left the brighten'd plain,
To con afresh their ancient lore,
And learn when 'twould occur again.

They thought and studied long and well,
And graved their cabalistic lines,
To after ages to foretell
The advent of these wondrous signs.

Their dumb words slept in sculptured stone,
Till chance restored the missing clue;
And now, no longer mute and lone,
They speak their prophecies anew.

The long-predicted day has come,
And hark! through lands to them unknown,
From prince's hall to peasant's home,
The Chaldæans' wingèd words have flown.

I stand beside a calm, deep pool,
With grassy carpet round me spread;
The young spring day is damp and cool,
And clouds are gathering overhead.

I watch the thronging gazers pass,
To where more open space is found;
With helioscope and tinted glass,
They come, and gather thickly round.

But while the darkness grows apace,
The envious mists obscure the sky;
I turn to earth, and o'er her face,
Watch the strange phantasms that fly.

Again is seen the oppressive cloud,
Descending on the stifling world;
And o'er the water, like a shroud,
An inky metal wave is hurl'd.

The death-like stillness of the trees,
Recalls to mind that army wan,
Ere yet Ezekiel bade the breeze
Transform each corpse to living man.

The birds have hush'd their joyous tone,
And sound the hurried call of fear;
Faint twittering cries are heard alone,
And cocks proclaim some danger near.

But see! the wreaths of mist divide,
And show the bright ring of the sun,
Yet quickly close again, and hide
The marvel, ere our gaze is done.

Thus is the "Sun of Righteousness"
Obscured by mists that rise from earth:
Our vanity, our worldliness,
Our busy plans of little worth.

And self-love is the broad shade cast—
The dire eclipse that hides the light,
The light of truth; and binds us fast
In ignorance and hopeless night.

March, 1858.

MEDICAL ATTENDANCE ON THE POOR.

IN the course of inquiries respecting the dwellings and condition of the London poor, we have often noticed, with gratification, the kind and well-directed exertions of the medical men appointed by the parishes to superintend the large number of sufferers who, but for this in times of sickness, would be without advice. In addition to their care during ill health, the labours of the district surgeons have in many instances been most usefully directed to the removal of unsanitary matters. Knowing the value and importance of the services of this body of hard-working professional men, surprise must be felt in noticing the reward offered in an advertisement put forth by the parish of Clerkenwell, for a medical officer for a part of that district. *The sum offered is* 50*l. a year,* and the surgeon is expected to find the *drugs and other medicine.*

We are told that in one of these districts the number of cases which came under the care of the medical officer was 1,750, which, on an average, required twenty attendances each: the consultations at surgery and patients' homes were about 7,000; the repetition of medicine, 2,770. The sum of 50*l.* a year for the services of an educated and duly qualified practitioner seems to be very inadequate; but, when drugs and chemicals have to be found, we should think that, if justice be done, the medical officer will find himself money out of pocket.

Fifty pounds a year for medical attendance and medicine for nearly 2,000 sick is about sixpence each case for attendance, on an average, during twenty days each, with medicine. Surely this is neither wise nor just.

EXHIBITION GROUNDS, KENSINGTON-GORE.

SINCE the removal of the Crystal Palace, when a scope of some forty acres was placed at the disposal of the Commissioners, the plot reserved for the immediate objects of that Board has lain in a state of desolation. Including the grounds of Gore House, the quadrangular inclosure is bounded by the Gore-road on the north, Cromwell-road on the south, Exhibition-road on the east, and the Prince's-road on the west. The parallelogram is complete, except at the north-east corner, where Lord Auckland's mansion and about five acres intercept that portion of park frontage. The Gore House and offices have been demolished, and the beauteous shrubbery, with which many of our sage senators and *literati* of twenty years' back were so familiar, has run to waste and wilderness.

Whatever the object of the Commissioners may be,—and the general opinion seems to have been adopted, that a park surpassing all that has been yet achieved is destined here to delight the public,—it is clear that until the gardens of *Eden* are purchased and superadded, we cannot complete the promised Hesperides.

In the view that the grounds are to be kept open, magnificent ranges of houses are now rising rapidly on the off sides of the three noble boundary roads, which are each 100 feet wide. These handsome elevations are the best possible finish for an intra-urban park: but, except as to the fence consisting of park paling, there is no evidence of design as yet visible upon the lands obtained at so enormous a cost. Some activity is, however, observable; as within a few months large quantities of rich manure have been laid down as agriculturists do on pasture lands. This looks like thrift, with a view to profit; but landscape gardeners, who wish to produce a smooth and soft turf, avoid of all things "engraissement," more particularly on rich alluvial soil like this.

Again, the work of destruction has begun upon the few trees, some of them of full growth and reverent age; a dozen noble hollies, of 50 to 100 years' standing, have already been felled; and one venerable and highly-ornamental yew now lies bleeding on the sward he shaded for a century: the axe is laid to the roots of the trees generally, and havoc rages in those woodlands once the haunt of Cromwell!

Can it be that a *model farm* for the instruction of juvenile oppidans is here contemplated, so that as students in arborage (if not botany) now derive knowledge from the labelled trees and shrubs of Kensington-gardens and St. James's, so the nascent farmer may acquire accurate data of productiveness per acre from the various guanos and chemical substitutes latterly used in place of farm-yard waste?

Should the experimentalist in these grounds mean, however, to indulge his taste for landseape gardening, and really be commissioned to plant the area in question, it is hardly conceivable wherefore he should have swept away so many fine trees and shrubs, which even, although he were to form his new plantations from beds of three yearlings, could in nowise have impeded the work. It is possible to plant, as at Strathfieldsaye, a few forest trees of large growth; but the substitution of a single holly or yew, such as have been *gothishly* hacked away, is an utter impractibility.

A grove of apple trees remains. We Bromptonians have often at this season turned our eyes towards these and others, their mates of the orchards, now no more, in anxious expectancy of the roseate bloom that ushers in the spring. Better allow them to stand than to convert the whole inclosure into one extended paddock. The new houses, the old town of Kensington, even its an-

cient steeple, will be a poor exchange for these once fascinating orchards. To the inhabitants of the western limb they were fascinating, as the only evidence at hand of blooming fruit-trees.

The recently beautified parks and such inclosures as the Exhibition grounds do make some amends to citizens far distanced from the country; and now that Sir Benjamin Hall has proved the perfect feasibility of forming lovely bosquets, shrubberies, and even forest glades within very circumscribed spaces, it is to be hoped that the opportunity may not now be lost of effectuating on the splendidly placed *enceinte* of the Exhibition park something that may even surpass what Hall or Loudon ever have done.

The improved taste of this generation, if it expects no more, will not be satisfied with less than the finish and style of examples already provided for them; therefore the Commissioners are practising on ticklish ground. The little strip of frontage facing Hyde Park-gardens proves to what perfection the choicest shrubs and flowers may be brought when treated with taste and judgment. What is easy on the north of Hyde-park cannot be difficult on the south side, where the soil is much better and the temperature even more genial, provided always that the right man be put in commission.

QUONDAM.

CARDIFF BUILDERS' ASSOCIATION.

AT the annual dinner in connection with this association, held on the 15th instant, various grievances as against architects were stated. Mr. Daniel Jones, the vice-chairman, said, in the course of an address,—There were many grievances which it would be impossible to remove by the individual exertions of one man, but which might be accomplished by united aid. They all, no doubt, strongly disagreed with certain clauses in specifications. It was a common occurrence for a gentleman requiring a house to be built for 1,000*l.* to take the lowest estimate, paying at the rate of 80 per cent. as the work proceeded. Now, in nine cases out of ten, it was laid down in the specifications that "the work must be done to the satisfaction of the architect," although the architect might not have properly explained his work. The contractor must finish his work to the satisfaction of the architect, and nothing could be omitted which the latter considered necessary to the finish of the work, though it were not mentioned in the specifications. He considered that a most "diabolical" clause. "If you don't take that down," said the architect, "I will not certify." In fact, the poor contractor got into a deep hole, and often had to swallow bitter pills. He had made up his mind to refuse any work when the specifications contained this clause. It had been the custom lately for the architect to furnish a bill of "quantities." No mistake which he might make in his quantities was allowed after the estimates had been sent in. Now he (Mr. Daniel Jones) contended that the builder or contractor ought in common fairness to be guaranteed that these quantities were correct. The idea of paying 2 per cent. on unguaranteed quantities! But the architects not only charged 2 per cent. on the quantities, but a few guineas for the paper on which the quantities were sent, which was preposterous. There was also a charge for the building plan, and he considered both these charges an imposition. Mr. P. Price said that they had suffered for the want of fair play on the part of the architects, who encouraged the public to take contracts at a price too low for the work to be done in a satisfactory way. The architects were thus accessory to the ruin of the builder. The architects considered themselves gentlemen and men of honour, and the public only laughed at the builder when he was taken in. They must not be fools enough to be swindled out of their money. The honesty and courteousness of the builders had been tried, and it should not be abused.

NOTRE DAME, PARIS.

THE great works undertaken for the restoration of Notre Dame de Paris have completely changed its interior aspect. The building is separated into two parts by a temporary partition running the whole length of the transept. The choir and the sanctuary, of which the great arches are in course of reconstruction, are at present abandoned, and a temporary altar has been erected at the end of the principal nave for the celebration of Divine service. As soon as the above arches are finished, the remaining ones, viz. those of the transept and nave, will be also restored, for they are as leaky as the others were.

The exterior works are being proceeded with as rapidly. Already the north façade along the Rue du Cloître-Notre-Dame has been attacked on all points, from the Porte-Rouge to the grand lateral porch. Different changes are being made in its decorations, especially in those over the lower great windows.

There existed between the two towers, formerly, a very high spire, rivalling in fineness and elegance that of the Sainte-Chapelle. Owing to some doubts as to its solidity, it was taken down in the last century. The present plan of the Government is to rebuild this beautiful spire, whose demolition caused so much regret, and which is shown on all the elevations of the church anterior to the nineteenth century.

The south façade is now in all its pristine grandeur.

ARCHITECTURAL INSTITUTE OF SCOTLAND.

A MEETING of this Institute was held on Monday, the 15th instant, in George-street Hall, Mr. Cousin in the chair. A number of ladies, for the first time, in compliance with the invitation of the council, attended the meeting.

Colonel M'Niven, of Tusculum, read a paper on "Imposing Approaches and Entrances into Towns and Cities, with miscellaneous personal Reminiscences of Rome, Greece, Syria, and Palestine." The reader referred in the first place to some of the ancient structures of Rome, whose Arch of Constantine, he thought, would prove a most desirable model for a structure to adorn the west approach to Edinburgh. Passing on to ancient Athens and to the Holy Land, he commented upon some of the magnificent ruins and antique monuments which had attracted his special admiration, and took occasion to remark upon the want of refined classic taste in some of the more prominent monumental structures of "Modern Athens."

Mr. William Miller, the secretary, read the report of the council upon the drawings and models submitted in competition for the Institute's prizes, which stated that thirty-seven drawings and two models had been received. The drawings sent in competition for the silver medal for the best geometrical drawing of an architectural subject were twenty-one in number, and the successful competitor was John Alexander Hamilton, apprentice to Mr. David Rhind, architect. The drawings of William Leiper, apprentice to Messrs. Boucher and Coustand, architects, Glasgow, G. S. Aitken, James Hopekirk, apprentices to Mr. Robert R. Raeburn, architect, Edinburgh, and William Fettes, apprentice to Mr. Jas. Matthews, architect, Aberdeen, were entitled to honourable mention. For the second prize, to be competed for by apprentices of not more than three years' standing, eight perspective drawings were sent in. The successful candidate was Robert Morham, apprentice to Mr. Rhind. Those entitled to honourable mention were J. M. Smith, apprentice to Mr. James Salmon, architect, Glasgow, Hugh Clark, apprentice to Mr. J. Honeyman, architect, Glasgow, and James Souttar, apprentice to Mr. Matthews, Aberdeen. For the third prize—for best design of a pulpit, Gothic style—the successful competitor was Thomas Ross, apprentice to Mr. A. Kirkland, architect, Glasgow. For the fourth prize—for the most novel and beautiful design for mural decoration—two drawings were sent in, but the council did not consider themselves justified in awarding a medal. For the fifth prize—for the best model or cast of a model—two models were sent in, the successful competitor being William Gelletly, Edinburgh. The other, a specimen of modelling from nature, was the work of Samuel Hunter, Edinburgh. The prize drawing of Mr. Morham the interior of the chapel of Versailles—was very skilfully executed.

"IS THE PRODUCTION OF STAINED GLASS AN ART, OR A MANUFACTURE?"

OXFORD ARCHITECTURAL SOCIETY.

AT a meeting of this society, held on the 11th inst. Mr. Buckeridge read a paper on "The Production of Modern Stained-Glass Windows," in the course of which he said,—"Are we satisfied with the majority of modern stained-glass windows? Methinks we shall be unanimous in answering to this question in that little monosyllable, 'No.' And why not? Because for the most part they are fearfully wanting in true artistic merit: the arrangement of colour is bad: the grouping of figures is bad; and the drawing of the figures is worse. You will not be surprised at this when I tell you that, with a few exceptions, our stained-glass windows are turned out of establishments the owners of which have no more artistic skill than a linendraper: these men turn art into a trade, and deal with it in much the same spirit as a greengrocer deals in vegetables. Such doings as these make one ask the question, 'Is the production of stained-glass windows an art or a manufacture?' Some call it one, some the other, and others split the difference and call it an 'art-manufacture,'—a very ambiguous term this, which generally means that manufacture has more to do with it than art. That it is an art, and that, too, of the highest description, may be asserted from the fact that 'there is no aptitude that an artist can possess by nature or education for colour, poetry, or composition, no power of expression, draughtsmanship, or invention, that may not in glass be legitimately wedded to its materials and the true principles of its requirements in design.'* It is as much an art as architecture, sculpture, or painting—I mean picture-painting; the art of stained glass-painting is a perfect and true art; but, at the same time, it is an individual one, which arises from the nature of its materials, and the peculiar treatment, most thoroughly opposed to picture-painting, which is necessary to produce a good piece of stained-glass painting. Picture artists for the most part have neither skill in, nor knowledge of, architecture and ornament, both of which are essential in works of stained glass. We need only go to New College Chapel, where we shall see how miserably such a man as Sir Joshua Reynolds, great in his day as a picture-painter, failed in his attempt to produce a stained-glass window. The west window was designed by him and a wretched thing it is. A similar infliction awaits one on visiting Magdalen College Chapel. It is quite refreshing to turn from the old dingy brown saints, who cast a gloom over the whole of Magdalen College Chapel, and look at the new window lately put in by Messrs. Hardman and Co. in which the true principles of glass-painting are carried out, though I fear not to such perfection as Messrs. Hardman and Co. generally manifest in their productions. Artists in glass-painting must be thoroughly imbued with the spirit of Mediæval art, having a thorough knowledge of the human figure, the management of draperies, and be well skilled in the knowledge of architecture and ornament. A few such men there are, and their numbers will doubtless go on increasing as pupils from time to time go forth from their masters' studies imbued with their spirit and skilled in their art." Mr. Buckeridge concluded his paper by reading other extracts from an article on this subject which appeared in the *Builder* of Dec. 19, 1857.

REMOVAL OF SMOKE STAINS.

IN reply to your correspondent, "H. C." I shall be pleased if the following remarks prove of service to him or others.

The stains on walls and ceilings, resulting from smoky chimneys, are various in their nature. Where a film of soot is deposited on a porous surface,—such as plaster,—it is almost impossible to remove the stain: if rubbing with water, to which has been added a little plaster of Paris and solution of ammonia, will not do it, nothing else will, and the disfigurement must be concealed by whitewash or colouring.

Where, however, the material is not very absorbent (as, for instance, wood or marble), the stain produced by the various hydrocarbons existing in all smoke may be got rid of by the application of *benzole*, or *coal-tar naphtha*. It is, of course, essential that the benzole itself be free from colour: if only a small quantity be required, it should be purchased *pure* of an operative chemist. But the ordinary commercial coal-tar naphtha can be rendered quite as good, by the addition of a little quicklime and subsequent distillation.

The benzole used in my laboratory for various purposes, I obtain from Mr. Halliday, of Holborn, who supplies it retail, at about 4*s.* per gallon. By the above simple process, it is purified from all non-volatile matters.

Coal-smoke, as it generally contains sulphuretted hydrogen and sulphide of ammonium, is apt to discolour lead-painted surfaces in another way, viz. the formation of the black sulphide of that metal. Here, again, if the stain is not a very old one, benzole may prove of use, when cautiously and rapidly applied, by veneering a thin film of the paint itself, and exposing a fresh, clean surface. As is well known, zinc paints are not discoloured by any sulphurous gas, and those colours containing lead may be perfectly protected by a coat of some hard varnish.

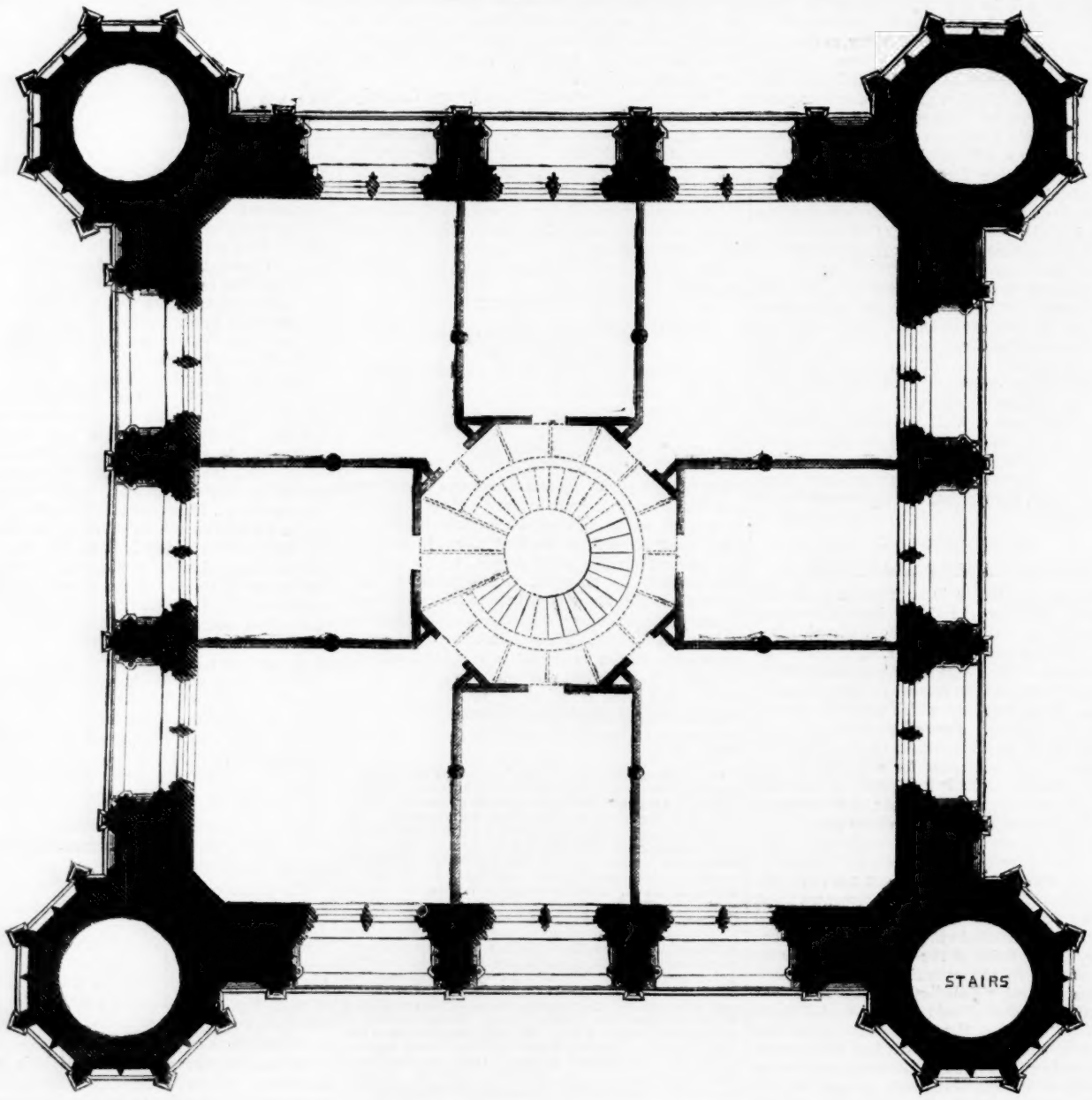
WENTWORTH L. SCOTT.

PRESBYTERIAN CHURCH COMPETITION, BRISTOL.

THE following award has been made in this competition:—1st prize, Mr. Neale, Bristol; 2nd prize, Mr. Knightley, London; 3rd prize, Mr. Hirst, Bristol.

The treasurer informed the author of the 2nd design that, although it did not meet all their requirements in as great a degree as the one selected, in an artistic point of view it stood first.

* The *Builder*.



VICTORIA TOWER, WESTMINSTER: PLAN SHOWING UPPER TIER OF WINDOWS.

THE VICTORIA TOWER, WESTMINSTER.

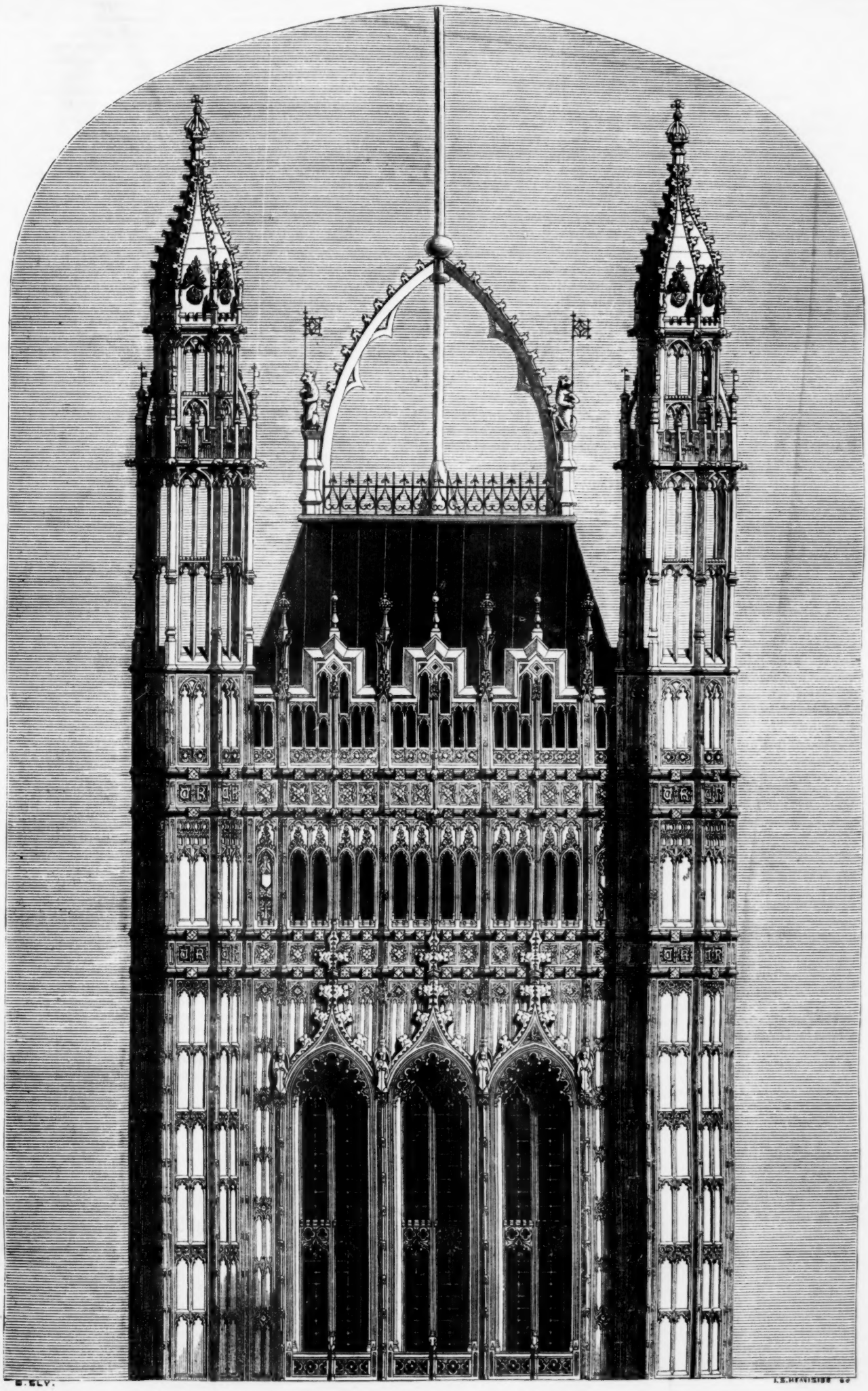
THE smiths are hard at work hammering together the iron roof which is to form the termination of the Victoria Tower, as shown in the annexed view, which, added to the engraving given in our number for March 13th (p. 179), affords a perfect representation of the tower from the ground to the flagstaff, to a large scale. Our illustrations of the Westminster Palace extending through several volumes, will be found to embrace nearly all the principal features of this enormous structure, "With which," as was said by Mr. Scott from the chair of the Institute lately, "no other building of the present, or of the last three or four centuries, can be compared, either in respect of its magnificent towers, its internal finishing, or its adaptation to the multifarious wants it is intended to supply." "Before such a structure," exclaimed a foreign ambassador, the Count St. Aulaire, when viewing it, "before such a monument of science and art as I now gaze on, I feel my own littleness." We name in a note the chief of these illustrations,* and for descriptive accounts of the various parts, which have appeared from time to time, our readers must themselves refer to the indexes.

Of the Victoria Tower so many particulars have been given that little remains to be said. We may briefly recapitulate that the tower is 325 feet high from the ground to the top of the finial of the turrets: these turrets themselves are 84 feet high from the cornice of the tower,—the height of a good-sized church tower. The internal diameter of the tower is 51 feet, and the external width, including the turrets, 70 feet. The noble groined vault over the inner area of the tower to form the Royal Porch below is about 63 feet from the ground. It is unnecessary to tell professional readers that great care was required in forming the foundations, especially as the ground was bad and full of quicksands. A double close row of piles was driven, completely surrounding the site, the earth within this enclosure was then excavated, and concrete was thrown in to the depth of 10 feet 7 inches. Two courses of 6-inch landings were then placed on the concrete, and upon these the walls were carried up, without accident of any sort, a certain number of feet every year. If the tower contains, as Mr. Charles Barry stated in his account of the scaffolding,* 117,000 cubic feet of stone, 1,350 rods of brickwork, and 1,190 tons of iron, there is a weight of at least 28,000 tons on the foundations. The enormous resisting power of good brick and stone, in position, is well exemplified by consideration of the weight on every foot cube of the lower part of the walls of the tower. The corner turrets, of which, as the plan shows, there are four, are built hollow, and were intended to be used by Dr. Reid for the passage of air. In one of these turrets, the south-east, is a winding staircase of iron, which leads without interruption to the roof, by 472 steps around a small well-hole. Hereafter, the steps will be continued up the turret to a balcony, which may be recognised in the engraving, whence is to be had, on a clear day, an unmatchable view of the metropolis and its surroundings. The buildings near the tower are greatly changed in aspect by the position: the Abbey, for example, looks prim and squeezed up, more lofty too, and the cloister-court is nothing more than the back-yard of a town house; the muddy Thames winds its course immediately beneath your eye, and the hundred churches of the City are close upon you. For the speculative observer, then, here are materials and to spare, but he must wait until the roof is finished, for the men are banging about the plates which are to cover it, and the standing is not the most convenient.

We came a little too fast up the iron corkscrew, and must return. Just notice the effect from the bottom, looking up the well-hole to the small dot of light which marks its present termination. The steps are perforated, which, though advantageous as to light and lightness, have the inconvenience of allowing the dust of one in the ascendant to fall through on another. It is a long, long turn; and we heard an energetic little lady sighing for some diversity on the way—a morsel of carving, or a quaint piece of groining, such as she had met with in many an old turret at home and abroad. We must be contented, however, with the fact, that so commodious and easy a mode of ascent is not to be found in many other towers. Moreover, this is not the only way up. The section in our previous volume, already

* Interior of House of Lords, vol. v. p. 183.
Entrance to House of Lords from Peers' Lobby, vol. v. p. 194.
Throne in House of Lords, vol. v. p. 230.
Candelabrum, vol. v. p. 231.
Reporters' Gallery in House of Lords, vol. v. p. 254.
The Victoria Lobby, vol. v. p. 303.
Interior of the House of Commons, vol. viii. p. 6.
Interior of House of Commons as altered, vol. ix. p. 611.
The New Cloister Court restored, vol. ix. p. 675.
St. Stephen's Porch, with Section and Plan, vol. xi. p. 562.
The Peers' Entrance, vol. xiv. p. 219.
The Peers' Staircase, vol. xiv. p. 627.
The Clock Tower and Section of upper part of it, vol. xv. p. 62.
Scaffolding and Section of Victoria Tower, p. 567, &c. &c.

* Vol. xv. p. 568.



THE VICTORIA TOWER, WESTMINSTER.——SIR CHARLES BARRY, R.A. ARCHITECT.

mentioned, shows that above the vault, over the ground story, the interior of the tower is formed into nine floors, irrespective of the apartments in the roof, by iron girders and columns carrying brick arches; and the plan in our present number shows how each of these floors is divided by brick walls into a certain number of rooms, altogether fire-proof, intended to serve as receptacles for records and other documents of value; and that, in the centre of these is a staircase around a large well-hole, to admit of a lift passing up to communicate with the various floors. A corresponding circular opening in the crown of the vault over the porch, ordinarily covered with flaps, permits the descent of the lift to the ground.

The staircase is light in construction, and is suspended by rods to the iron girders. The iron gates which fill the main gateway below have been thought too light for their position: they are of admirable workmanship, for the most part wrought, and we are not certain that ironwork of more massive character would be an improvement. The flagstaff, which will terminate the roof, is to be of rolled sheet iron, bolted together, 110 feet long, and 3 feet in diameter at the base. We may mention here that the iron columns and girders were provided by Mr. Jabez James, who is also now executing the roof, a costly work. The masonry was commenced by Mr. Thomas Grissell, by whom the bulk of the Palace was erected, and has been completed by Mr. John Jay, in a sound and excellent manner.

We had intended to speak of the frescoes and other adornments of the Westminster Palace finished since our last notice, and to allude to the Speaker's house, now fast approaching towards completion: of these, however, we must seek another opportunity to speak, contenting ourselves at this moment with the observation that the coloured decorations of the state rooms in the latter are nearly finished, and are very successful. When posterity reviews the difficulties which Sir Charles Barry had to encounter in conducting, during twenty years, the works of a building covering more than eight acres of ground, with 1,100 rooms, nineteen halls, 126 staircases, and more then two miles of corridors and passages, under orders, often contradictory, involving extensive changes of plan, whereby no less than twelve official residences (now eighteen in all), and much extra accommodation, increasing the cubical contents of the building, more than half were added; when the interruptions by the sittings of Parliament are considered, the nature of the foundation, and the successful result, it will be felt that the labours, anxieties, and responsibilities of the architect were not duly appreciated by the governing powers. As we have before now asked—who shall tell—who inquires, indeed,—how many sleepless nights, this tower alone has cost its architect? "Putting aside the question of art, its successful completion, in a constructional point of view, must be regarded as a great achievement. Had the foundation proved insufficient, had it settled unequally and fallen out of upright, had an arch yielded or the ponderous groined vaulting slipped, loud of course would have been the outcry,—ruinous, probably, the blame. But, disaster being avoided, difficulties overcome, the structure successfully raised, how few stop to appreciate the comprehensive grasp of all circumstances, the prevision and the varied skill demanded for the result!" Long may the tower stand a symbol of the power and dignity of England, and long may its accomplished and esteemed architect live to enjoy a reputation which will grow with the coming years.

Posterity will not ask what the work cost; it will simply be proud of what it has.

DISC SIGNALS, PARIS AND ST. GERMAIN RAILWAY.

ON the Paris and St. Germain railway an ingenious system of disc signal is at present in constant use, and succeeds admirably. It is the invention of Monsieur Baranowski, who has so contrived the mechanism that the flange of the wheel of any train, fast or slow, turns the disc of the signal, which remains showing the "stop" or transverse sign for a time, after the train has passed, proportional to the velocity, and then slowly returns to its place, showing the way clear. The principle is based on the great specific gravity and incompressibility of mercury. A small pump placed beside the rails contains about two *litres* (three pints and a half) of mercury, and is furnished with a piston loaded with a weight of 63 *kilogrammes* (about 140 pounds), so disposed that it is raised by the passage of the train to a height corresponding to the velocity with which it is going. The movement is executed by a beam seven mètres long, placed inside the rail, but touching it towards the middle of its length;—the flange of the wheel separating this beam from the rail with a shock proportional to the speed, and which acts by levers on the mercury in the pump, at the same time turning the disc. The slow descent of the mercury into its previous position causes the disc to remain up for such a time as will insure safety from accidents caused by any train following running into the first one.

PROVINCIAL NEWS.

Harwich.—This port being selected as the principal coast-guard station of an extensive district, the force has been considerably increased, and the Lords of the Admiralty obtained possession of the Ordnance Cement Factory for the purpose of erecting suitable dwellings for the occupation of the officers and men connected with the service. Designs for an officer's residence and fifteen cottages were prepared by Mr. Horace Darken, architect, of this town. The contract was executed on the 22nd of September last, and the premises were to be finished and handed over to the Admiralty on the 22nd of the present month. The buildings, which are erected in the form of a square, facing the sea, present an elevation worked in red kiln bricks of the neighbourhood, with white brick quoins, chimneys, and dressings to windows and doors, and an ornamental eaves cornice with brick consoles. The total cost has not exceeded 4,000*l.* The works have been executed by Messrs. Newton and Butcher, carpenters; Mr. Wilding, bricklayer, plasterer, and stonemason; Mr. Cottingham, plumber and glazier; and Mr. Alexander, painter. Mr. Charles H. Perkins was the clerk of the works appointed by the Admiralty.

Bicester.—The following tenders for the erection of schools and master's residence, at Bicester, have been received.—Messrs. Orchard, Banbury, 1,761*l.*; J. Thomas, Abingdon, 1,698*l.*; Young and Co. Oxford, 1,695*l.*; G. Cooper, Aylesbury, 1,534*l.*; C. Selby, Oxford, 1,500*l.*; W. Bartlett, Witney, 1,475*l.*; J. Munday, Buckingham, 1,095*l.*

Worthing.—The sewerage contractors having been at law with the local Board, a verdict has been given, by consent, for Messrs. Frend and Hamill, with leave to the Board as defendants to move to set aside the verdict upon the legal defence. In the actions in which Messrs. Gent and Billing were the plaintiffs, the Board has to pay 490*l.* and a considerable sum in costs.

Brighton.—At the last weekly meeting of Directors and Guardians, two tenders were sent in for sinking a well, and constructing a reservoir, &c. for the Industrial Schools on the Warren Farm; one from Samuel North, 5, Southampton-street, Brighton, offering to do the works for 334*l.* 15*s.*; the other from Thomas Tilley, Brighton, the sum named in his tender being 875*l.* Some of the guardians thought that, before either tender was accepted, there being such an extraordinary disparity in the amounts, they ought to be referred back to the committee. The original estimate for the completion of the works was 417*l.* Mr. North's tender, however, was ultimately accepted, and his sureties were also accepted, for the due performance of the contract.

Gloucester.—The charity known as the Crypt Grammar School, having of late years very much increased in value, it has been decided to build a larger and very superior school, capable of accommodating about 400 boys.

Chippenham.—The plans, &c. for the new workhouse, prepared by Mr. C. C. Creeke, of Bournemouth, architect, have been approved by the Poor-Law Board, and the guardians have issued an advertisement soliciting tenders for the erection of the building. A site has been found for the building at Rowden, close to the town, and to which will be attached six or seven acres of land for cultivation by the inmates.

Swansea.—The works at the docks have been begun. The contractors, Messrs. Tredwell, of London, expect to complete the half-tide basin in four months. The whole dock area of thirteen acres, and also the railway thereto, will be completed without delay.

Liverpool.—A project has been revived, having for its object the connection of the Liverpool and Southport and Manchester and Sheffield Railways with all the Liverpool railways, and, with the proposed Garston Line Extension to Liverpool, forming an "all round town" railway, and passing through Everton, West Derby, Toxteth, and Garston. The surveys have been made by Mr. Fulton, engineer, who estimates the probable cost of the line at 250,000*l.* The railway would be about 8 miles long.

York.—A new organ has been constructed for the York Blue Coat Boys' Charity School. The makers are Messrs. Forster and Andrews, of Hull. There are in it upwards of 1,000 pipes and nineteen stops. It is inclosed in an oak case, and the front is occupied by burnished block tin pipes. The hall has been painted and grained. Mr. Joshua Oldfield is about to restore the mutilated springings of two arches, and ultimately the hall will be completely restored and renovated.

Doncaster.—It is contemplated either to erect a new stand or add a wing to the present subscription one. The estimated cost is upwards of 500*l.* which will be defrayed by twenty subscribers of 25*l.* each, who, for their payment, will have the privilege of entry for themselves and their families, subject, notwithstanding, to the same charge for admission as to the grand stand.

CHURCH-BUILDING NEWS.

Saling Magna (*Essex*).—The foundations of the new Parsonage are in, and the whole is to be completed by Michaelmas. It will be of red brick, with black bands and arches, of simple and inexpensive construction. The contract has been taken by Mr. Parmenter, of Bocking, for 987*l.* The first contract for the restoration and enlargement of the parish church is nearly completed: it comprises the entire restoration of the chancel, with a new chapel on the north side of the chancel for school children, and a new vestry. The works have been carried out by the same contractor for 420*l.* The carving is by Mr. H. Earp, of London. It is intended to complete the reseating and restoration of the nave by Michaelmas. Mr. Withers is the architect carrying out these works.

Odiham. — Three stained-glass windows have just been placed in the parish church of All Saints, Odiham, in Hampshire, as memorials of the late Lieut.-col. Short. They have been executed by Messrs. Hardman, from the designs of Mr. H. Woodyer.

Walsall. — The foundation stone of a new chapel, about to be reared for the accommodation of a portion of the Independent congregation in this town, who seceded some months ago, has been laid by Mrs. Stephens. The architect is Mr. Jerome, and the builders are Messrs. Taylor. The site of the new chapel adjoins St. Mary's-row, on the northern side, and the building will stand at a considerable elevation from the road. Its style will be the Decorated Gothic of the fifteenth century. The western front has two entrance doors, with a window of stained glass, on either side of which will be two octagon turrets to contain staircases to the galleries, between which will be a portico, ornamented in conformity with the style, and fronted by a flight of six steps. The building will be principally of brick, with dressings of Bath stone. The apex of the roof will be surmounted with carved pinnacles, the whole building, including the portico, being 85 feet in length by 46 feet. The roof will be an open one, and spring from cast-iron columns parallel with the side walls. At the back an arch will cross the chapel, behind which will be the organ gallery, and underneath a chancel communicating with two side vestries.

Rawden.—By the plans of Mr. Paull, of Cardiff, architect, selected for the new Baptist College here, the college, the style of which partakes of the Tudor, will stand near the edge of the plateau, at the top of Cragg Wood. The aspect of the front will be south-west. No room, chamber, or office will have a north aspect. The front of the building will be devoted to the president's residence, the educational apartments, and the students' rooms, the latter ranging on either side of the two former departments, which last occupy the central division. In the rear, and branching at right angles from the centre of the front building, will be the refectory and domestic offices. The proposed building will accommodate twenty-five students; but the plans will admit of enlargement, without interference with the original accommodation, so as to afford room for fifteen or twenty in addition. The lecture and class-rooms above (called the "educational apartments"), are in the centre of the buildings. They are entered from the corridor, and are equally accessible by all. The lecture-room is 18 feet by 24 feet, and the class-rooms are each 18 feet by 15 feet. All these have a uniform height of 13 feet. The library is on the one-pair floor, and is approached by the central staircase. The dimensions are 39 feet by 26 feet, and 20 feet high. There is room for 10,000 volumes, "octavo" being taken as the average size. The dining-room is at the rear of the front building, and its dimensions are 35 feet by 23 feet. The tutor's residence in front is arranged as a detached house. On the ground-floor are a draw-

ing-room, 18 feet by 15 feet, with a bar window; a dining-room, 18 feet by 15 feet, and a store-room. The estimated cost of the whole building is 6,000*l.*

Shipley.—A memorial window of stained glass has been placed in the chancel of St. Paul's church, Shipley. The work has been executed by Mr. F. Barnett, of Edinburgh. The window, as described in the *Leeds Intelligencer*, is of seven lights, divided by a transom-bar, and may be described as consisting of two fenestrellæ, with a complemental light. The head is filled in with tracery. The general design of the glass is to give a representation of the twelve apostles of our Lord, having our Saviour in the central lights. At present only the portion above the transom is filled in with coloured glass. The order of figures observed, beginning on the left hand, is the following:—St. Thomas, St. James the Great, St. Peter, St. Andrew, St. John, and St. James the Less. These are represented each as bearing his appropriate symbol; whilst our Lord occupies the centre light, and appears with uplifted hand, as in the act of blessing. The whole of the figures are placed within canopies, and are draped in dresses of varied colours. The outer robes are all diapered with crosses, and bordered with a border of gold. Beneath these there is a series of medallions representing the following subjects in our Lord's history:—The Angel appearing to Mary, the Birth of Christ, the Presentation in the Temple, the Flight into Egypt, Jesus in the Temple sitting in the midst of the Doctors; the Crucifixion, the Burial of Jesus. Above and below five of these medallions are legends setting forth the donors, and the persons to whose memories they, along with the lights above, have been erected. The tracery in the head of the window is filled with the Evangelistic symbols, the Resurrection, the Ascension, the pelican with its young, the lamb and the vexillon, and ribbons bearing an inscription.

Newcastle-upon-Tyne.—At a meeting held in the vestry of St. Nicholas's Church, the mayor presiding, it has been resolved to erect a memorial window in the church as a tribute to the late Dr. Ions. A committee has been appointed to carry out the object, towards which a considerable amount has already been subscribed.

NEW ROMAN CATHOLIC BUILDINGS IN IRELAND.

Tramore Church (Waterford).—This building was commenced on the 14th of September, 1856, and since that date the walls have been raised to the level of the top of the aisles, and the pillars separating the latter from the nave are fixed. The plan comprises nave with side aisles, transept, chancel with eastern chapels, tower and spire standing to the east of the north transept, sacristy east of the south transept, and north and south porches. Total length in clear, 165 feet; width, across nave and aisles, 65 feet; transepts, 103 feet by 25 feet; height from floor to ridge, 75 feet; and height of tower and spire, 195 feet. The style of architecture is "Perpendicular." The principal doorway in the tower has marble jamb-shafts, with rich mouldings over them. The tower is divided into three stages,—the lower having a moulded plinth course, the middle a single-light trefoil-hooded window on three faces, and the upper two double-light traceried belfry opes on each face, and finished with corbelled eave course, from which level rises a broach spire, with gabled projecting lights and niches, and terminated by the emblem of Christianity. The tower is decorated with a pair of buttresses at each angle. The stone used in the construction of this building is the blue trap-rock of the neighbourhood, and granite for the dressings. Messrs. Ryan, of Limerick, are the contractors. The cost of the shell, exclusive of the bell-stage of the tower and spire, is 8,000*l.*

In the town of Wexford are two new Roman Catholic churches, identical in dimensions and design, and which are now being fitted up interiorly, but differently. They were built by, and from the plans of, the late Mr. Pierse, formerly clerk of works under the late Mr. Pugin, and are said to be impressive buildings in the Gothic style. The Bishop insisted that they should be identical, to prevent jealousy and unpleasant comparisons amongst the townspeople.

St. Patrick's, Celbridge, County Kildare.—The plan consists of nave, side aisles, chancel, eastern chapels, and tower, not yet commenced; dimensions in clear being 115 feet by 50 feet, and height from floor to ridge 58 feet. The aisles are lighted by long, narrow, single-light windows, and the clerestory has double-light windows, with tracery and label mouldings. At the ends of aisles also are double-light windows similar in character, and in the western gable are two tall lancet-headed lights, with rose window over, and connected externally by a wide relieving arch and label moulding. Buttresses are introduced at the angles of the nave and aisles, as also of the tower, which is divided into four stages, in three of which are windows, and terminated by a spire with gabled lights. The contractor is Mr. Robert Farrell, of Dublin, and the amount of contract 3,000*l.* The stained glass is from Hardman, of Birmingham, and Wailes, of Newcastle-on-Tyne. Style Early English. The clerestory is being built at present.

St. Michael's Rathdrum, County Wicklow.—This church consists of nearly the same plan as the foregoing, but it has a chancel arch, and the roof of the chancel is lower than that of the nave. Its style is more ornamental than that of Celbridge, being transitional between Early English and Decorated. Its size in clear is 105 feet by 50 feet in width. The west gable is surmounted by a very handsome bellcot for two bells. Material of walling is granite, and the works are being carried on under the charge of Mr. Crimean, clerk of the works. This church is now in progress of roofing.

St. Mary's, Blessington, County Wicklow.—This little church consists simply of nave, chancel, and transepts, without any aisles or side chapels. It has a sacristy and north and south porch. Dimensions of nave and chancel are 80 feet by 25 feet, and the transepts 60 feet by 16 feet; height to ridge 46 feet from floor. The style is Decorated, and the contractor Mr. Robert Farrell. Amount, 1,850*l.* Material, granite. The walls are just finished.

All Hallows College, Drumcondra, near Dublin.—The west wing of this college was commenced last year. It will show a frontage of 230 feet and three stories in height towards the Swords-road. It contains a refectory 100 feet by 30 feet, an aula maxima 70 feet by 30 feet, a large physic-hall, a grand staircase, professors' rooms, and accommodation for sixty students. Mr. Connolly is the contractor. Amount about 8,000*l.*

Convent of Mercy, with Schools and Orphanage, Belfast.—This extensive group of buildings has greatly progressed during the last year, and they are situated on a plot at the side of the Crumlin-road, and face Donegal-street. The south wing of the convent is finished, and occupied by the nuns. The schools, containing 1,500 children, are also completed. The orphanage, for forty children, will be finished next month. The cloisters, and north, east, and west wings of the convent are now being built, and will be completed before the end of this year. The style throughout is Decorated Gothic of monastic and collegiate character. Material red brick, with dressings of Scotch stone. Contractor, Mr. Thos. Byrne, of Belfast and Armagh. Amount of contract, 10,700*l.*

Mr. J. J. M'Carthy, M.R.I.A. of Dublin, is architect to all the foregoing. Messrs. Weightman, Hadfield, and Goldie, of Sheffield, are building a new cathedral at Ballaghadreen, county Mayo, a church at Charlestown, and alterations and additions to St. Peter's Church, Phibsboro', Dublin. All are in the Gothic style.

Mr. P. Byrne, architect, has designed a new church for the picturesque little village of Enniskerry, to be erected on a free site given by Lord Powerscourt, and near a Protestant Church also to be built at the expense of his lordship's mother the Marchioness of Londonderry.

New churches are in progress of erection at Ballyvaughan, county Clare, Ballybay, county Clare, and at Bundoran. The latter is expected to be open for divine service by the 1st of August.

DAMP WALLS.

IT has been my misfortune to be the tenant, as well as the owner, of several houses built of oolite stone, and I have invariably found that distemper-coloured walls were damp, while those painted in oil literally streamed under certain changes of the atmosphere, and especially after the breaking up of frost. Papered walls were better than either, but even these were sadly expensive, from the frequent renewals rendered imperative. Each room in my present dwelling has two walls of stone, one of brick, and one lath and plaster: on the two former the paper is worse at the end of one year than in seven years of either the latter two. Last summer I hung my ordinary sitting-room with a twopenny paper—dark chocolate ground, with a buff pattern on it, and the setting in of winter soon convinced me of increased expenditure in lighting. My "moderator lamp," which before did wonders, now made but darkness visible. I am, however, amply repaid by having perfectly dry walls, through all changes of weather, while every other room in the house exhibits its former "moist miseries." When I have tried another room, I shall be happy to give the readers of the *Builder* my further experiences. In the meantime, I should be glad of a solution of the problem. Is it that the same property which absorbs light also prevents condensation of vapour upon the otherwise cold walls? I presume such condensation is the general cause of damp interiors, though it may sometimes be from without.

A. B. SORBENT.

BOTTLE-NECKED THOROUGHFARES

WILL exist as long as we continue to have bottle-necked ideas respecting our duties as citizens. As the streets are wide in the middle and narrow at the ends, so we are by no means deficient in good inward feeling as regards the public welfare; but are too apt to lose sight of the best means of showing that good feeling. Our ideas of benevolence are narrowed and contracted to the relieving of those who are actually in need, and in this matter we are perhaps liberal enough. But we do not enter into that more broad-minded field of benevolence commonly called "public spirit." We should consider what tends most to the good of all, without distinction; and we cannot do so in a better manner than by endeavouring as much as possible to improve the town we live in, so as to render its air healthy, and its thoroughfares good and safe. And in so doing we shall necessarily give employment to many whom we otherwise might have to maintain at a greater expense, and in a manner less honourable both to them and to us. We who live in provincial towns should compete together with a good will to see who can make their own town the healthiest, most prosperous, most enlightened, and most sightly. We have many (glorious I might almost say) examples of what this good feeling may do;—Carlisle, Nottingham, Bedford, and Ipswich. And, on the other hand, sad examples of the effects of private spirit. Look at that poor old disenfranchised borough: its wealthy inhabitants say, "Every man for himself, and let the public take care of itself." And so the poorer inhabitants, following in their beat, when an election came, held out their hands slyly for bribes. The town gets disenfranchised. It has no manufactures; no navigable river. A railway passes but seven miles on the west, another but seven miles on the east, but none goes through it. And now, perhaps, as a last resource, this brick-and-mortar seedy swell would like "one of the priest's offices, that it may eat a piece of bread." The decaying borough would fain be made a bishoprick! I cannot be accused of being personal, for a town is not a person. Local I may appear; and if, in so appearing, I have hit home, I will be glad that there is public spirit enough to feel it. But, to return to London. Our chief capital, belonging to no county in particular, has no one to care for it,—has no nominal rival to excite emulation, except in foreign countries. But it has actual rivals many times less than itself in our own country: let its people visit them. As a port, it has Liverpool, which town should also serve as a model as regards its pavements. Architecturally it has Oxford; but, as regards natural advantages, London stands pre-eminent. There is no air finer than Middlesex air, in its pure state; no water equal to Thames water, if taken above the influence of the London sewers. It is neither too exposed by proximity to the eastern coast, nor too secluded by surrounding hill or forest. Let London improve itself as other towns have done, lest, while it is getting more and more disagreeable, they, moving in the opposite direction, shall draw from it its inhabitants. Let every one do what he can to improve the town he lives in; and he will be doing an act of patriotism, the greatest within the power of most men, and the most successful and grateful in its results to himself and to his country.

W. S.

ARTISTIC COPYRIGHT.

ARCHITECTURE.

THE Artistic Copyright Committee appointed by the Society of Arts, after ten meetings, have agreed upon a report to the council, urging that the laws of British artistic copyright require to be amended. With reference to any Bill that may be prepared, the committee resolved that—

"1. The chief object it is desirous to effect by the Amending Act, is to secure a copyright for the author's life, and 30 years after, for such of the designs of an artist as he may himself have conceived, and as have been produced by his own hands or by those of his assistants, and as he may himself have signed or marked, so as to claim copyright for." This should apply, they say, to architects, with this qualification, that "As to architectural plans, models, &c. only the use of the originals to be secured: but not to prevent new drawings, &c. being taken from executed buildings or works."

This is not going far enough; but the difficulties in the way of enforcing more are considerable. We draw attention to the subject in order to elicit suggestions and observations on it.

It must not be supposed that the artist alone, even in the case of the architect, is interested in obtaining protection for copyright. There are many cases in which a good design might be obtained at small cost, if the architect were protected, for which he is now forced to make such a charge as prevents his employment.

ARCHITECTURAL PUPILAGE.

ON reading your report of the meeting at the Architectural Association, held on the 5th ult. I am induced to offer a few remarks, and to send you a case which has come under my own observation, in the hope that others will do likewise: by this means your readers will perhaps arrive at some satisfactory conclusion upon a point of great importance to many members of the profession.

A young gentleman of good connections was articled some years since to ——, in ——; the premium paid for a term of five years being nearly 320*l.*

He was required during his pupilage to take an active part (equal with the salaried clerks) in the general duties of the office, to trace, mount drawings, attend the door-bell, and run errands! He remarked, and I think with justice, "I appear to have paid nearly 25*s.* a week to assist in the miscellaneous duties of an office, to work for others, and am compelled to glean a knowledge of my profession which I really expected constant assistance in abundantly gathering as best I may."

Remonstrance with the principal proved useless: the practice was upheld as "customary in the profession."

I trust, however, that this assertion is a false one, and that many will be found to refute it; if, alas: it should be true, surely it is a custom which urgently demands reform.

I fancy it is rather a prevalent idea amongst members of professions that they are not bound to teach their pupils anything; but clearly (allowing it to be so) they are bound not to hinder their professional studies by thrusting work upon them which they ought to keep a sufficient stock of clerks and messengers to execute.

No conscientious man would take pupils as a source of income; but in cases like the above, that would appear to

be the sole intention; for, not content with a handsome premium in consideration of the "run of the office," principals contrive to extract the greatest amount of benefit to themselves, without for an instant thinking of the real object for which the pupil has paid them.

If pupils are to be placed exactly on a footing with salaried clerks and messengers, as regards the working of an office, it is obvious that they ought to be paid a salary instead of paying to serve their articles, as amongst tradesman; apprentices in their case pay a premium for one or two years to be initiated into their duties, and then receive certain wages in consideration of their services for the remainder of the term agreed on. REFORM.

DEFINITION OF ARCHITECTURAL PRINCIPLES.

THE suggestion of Colonel Nelson in your journal is worthy of considerable attention, and I hope your readers will not let the subject drop without at least an effort to carry out that suggestion. The principles of architecture have never been satisfactorily defined, and the student is often sorely perplexed by the contradictory elucidation he meets with of the same architectural principle. The endless battle of the styles, and the wholesale condemnation of "modern builders" and their works, seem to absorb that attention which would be better employed on such subjects as the above. It would, no doubt, be difficult, if not impossible, to express by words all that is comprehended by the principles of architecture; but from these principles we may deduce a series of maxims or laws more numerous than the subtle principles themselves, and as varied as the minds engaged in their contemplation. If, therefore, you would kindly open your pages for this object, and solicit definitions of, for instance, construction, harmony, expression, simplicity, grandeur, symmetry, &c. &c. and publish your own selection from the replies as they are sent in, you would give such a check to arbitrary criticism as your numerous readers would justly appreciate. C. E.

DECISIONS UNDER METROPOLITAN BUILDINGS ACT.

WOODEN BUILDINGS.

AT the Thames Police-court, on Saturday last, Mr. Dobson, a builder, attended to answer the summons of Mr. John Billing, district surveyor of St. George's-in-the-East, relative to the erection of a wooden building about 20 ft. long by 9 ft. wide, and 14 ft. high, in Cannon-street, St. George's-in-the-East. He was supported by the owner, Mr. Smith, and his solicitor; Mr. Selfe entered fully into the case, and, considering it was a building to which it might be said the rules of the Act were inapplicable, adjourned the case until Saturday, the 2nd of April, to afford time for Mr. Dobson to apply for the sanction of the Metropolitan Board of Works. Mr. Selfe stated that, if this consent was not then granted, he should make the order as requested by the district surveyor, that the building be constructed conformably to the Act, with brick or stone walls, and a foundation placed upon the solid ground.

THE PREVENTION OF COLLIERY EXPLOSIONS.

AT the opening of the last session of the Institution of Civil Engineers, Mr. Wright read a paper "On Lighting Mines by Gas," in which he described the success of an experimental attempt at lighting the Balleswidden mine, in Cornwall. The annual cost of candles had been 834*l.*: of gas it was not more than 487*l.* The ventilation was better, and there was an entire absence of the sickening smoke and bad odour previously existing. It might not be impossible to draw off the gas now floating dangerously in coal mines, and make it subservient for lighting up the mines in which it may abound. Probably, in many or most cases, however, the gas generated in coal mines would be found too impure and mixed with other gases and air to be usefully employed. We will premise, therefore, that the gas to be used is made in the usual way, and above ground, to be forced down by pressure, as in the case of the Cornish mine already referred to. The pipes and apparatus for furnishing the light being fixed in position, the gas in the coal mine, whether in great or small quantity, must be exploded by the electric current. The mine then being immediately lit up, gas will never again accumulate in dangerous quantity so long as the illumination is continued, and throughout the pit. The chief cause of danger in coal mines arises from the insufficiency of outlets for the gas that has collected However the area of a pit may be enlarged, there is seldom more than the two or three shafts originally bored. Pit owners are generally intent upon the realization of large profits, and are loth to expend money which brings no pecuniary increase. The safety of the poor pitmen, whose labour is perhaps the most repulsive of any that exists, demands that, as the mine increases in extent, fresh shafts should be constructed at certain regular specified distances. These shafts need not necessarily be of such dimensions as those used for conveying coals to the surface. Probably a fourth part of the diameter of the coal and ordinary shafts would be amply sufficient to carry off the foul atmosphere that endangers human life now to so frightful an extent. Coal mine explosions are now of very frequent occurrence, and justice to a labouring class of men, and to those dependent upon them for support, who are now so often left in a state of suffering destitution, requires that this important subject should be considered attentively, and with as little delay as possible. PLEBIS DEFENSOR.

THE PROJECTED TORONTO AND GEORGIAN BAY SHIP CANAL.

As may be seen on the map of North America, the chain of lakes issuing out into the St. Lawrence and the Atlantic is so scattered across the Continent, that, though running mainly from west to east, some of them run southward and others northward, so that there is a long circuit, in certain cases, which offers temptations to make shorter (yet, in fact, sometimes very long) cross cuts by canal, to facilitate the great lake traffic from the far west through the St. Lawrence and the Atlantic. One of the most tempting of these cross cuts would be that whereby the long circuit from Lakes Superior and Michigan, through Lakes Huron and Erie to Lake Ontario, on which Toronto stands, might be shortened by a ship canal running from Georgian Bay, (opening eastward out of Lake Huron), through Lake Simcoe, to Toronto, there being in fact a chain of small lakes and rivers already occupying the intermediate space, so as to be capable perhaps of being turned to account in the formation of a ship canal in this direction.

Such a junction forms the subject of a grand project lately started by the Toronto people. The route has been surveyed by Mr. Kivas Tully, C.E. and declared practicable. This gentleman suggests several routes, but the best, he considers, is that from the river Humber, west of Toronto, to Lake Simcoe, and from thence to Lake Huron, by the Nottawasaga river. The length of this line would be 100 miles; and the cost 22,170,750 dollars. This cost, as remarked by Mr. Tully, though "considerable," is much less than the actual cost of another grand scheme which is now in a fair way of completion, namely, the Grand Trunk Railway of Canada, the estimated cost of which is 48,000,000 dollars. It may be questioned, however, whether the estimated cost of the canal project be sufficient, when it is considered that immense quantities of excavation are estimated at 25 cents per cubic yard. There are no less than between three and four hundred millions of yards of such excavation. The soil would indeed require to be very "light" at this rate. It is said, however, to be so.

IRON SAFES AND SAFE BORERS.

MENTION has been made in the newspapers of the discovery at Manchester and elsewhere of some instruments for boring through iron safes, and very powerful and ingenious instruments they are. The key-hole is made to receive the fulcrum of the apparatus, and in the course of a couple of hours a hole 2 inches in diameter can be bored through an ordinary iron safe, and the means afforded to destroy the lock and open the door. To meet such cases, Mr. Chubb has patented an arrangement which at any rate increases the chance of safety: holes are drilled in the inside of the door, thickly together, around the lock, not through to the face of the door, but very nearly; and into these are screwed cast-steel plugs, which destroy the edge of any cutting instrument which can be brought to bear upon the safe. Where safes are left any considerable time unwatched, as in warehouses and establishments not occupied during Sunday, for example, the additional precaution ought not to be overlooked

The bores in society were already numerous enough, without such an addition to them as these discoveries in Manchester disclose. It is lucky, while Roguery has his mechanician, that Prudence has her Chubb. When *he* steels a safe it is to protect it from robbers. Thank you, Mr. Chubb.

GRAVEL-PIT CHAPEL, HACKNEY.

THIS chapel has been erected for the Unitarians on the east side of Paradise-place, in the parish of Hackney. The building is Early Decorated in style. Its plan is cruciform, and consists of a nave and aisles, north and south transepts, and their entrance porches, and a chancel. Its total length is 81 feet 9 inches; its width, across the nave and aisles, 43 feet, and that across the transepts, 65 feet 6 inches, exclusive of the porches. The nave ridge is 43 feet from the ground line; the transept ridge, 36 feet; and the eaves of the aisle roofs, 18 feet above the same level. There are 500 sittings on the ground-floor, and accommodation for the choir and fifty children in a gallery over the western entrance, which is approached by two separate staircases at the extremities of the aisles. Above the south staircase a spirelet rises to the height of 65 feet from the ground line, and groups well with the trees by which it is surrounded. The roof consists of open timber framing: the nave arches are also of timber, having their spandrils filled in with ornamental tracery work. The pewing is open, stained and varnished. The pulpit and organ are traceried, and very ornamental. The gas-fittings are of brass, and supplied by Debaufer and Co. of Old Fish-street. The interior is heated with hot air by Haden and Son, of Trowbridge; and the whole of the works were conducted by Mr. G. T. Carter, of Hornsey-road, under the direction of Mr. H. A. Darbishire, the architect of the building. The foundation-stone was laid on the 26th of June last year, and the building is to be opened this week.

NOTES UPON IRON.

SUCH a period as that through which we are now passing has not been without its parallel in the history of the iron trade.

Notwithstanding that there are now fifty blast furnaces less in operation than there were in the first week in October, yet the make of pig iron is considerably in excess of the demand; and though a large number of works are standing, throughout the kingdom, at which malleable iron is produced, yet the orders that are coming in are so few, that it is the exception to the rule where any establishment has orders sufficient to keep half their machinery in gear.

It is not surprising, therefore, that, in such a state of things, prices should be nominal.

The preliminary meeting of the Masters' Association is expected to be held on Wednesday next, when, however, it is not probable that any alteration will be declared in the rates adopted at the last meeting.

Books Received.

The History and Design of the Foundling Hospital: with a Memoir of the Founder. By JOHN BROWNLOW, Secretary of the Hospital. London. 1858.

THE history of the Foundling Hospital, in Guildford-street, is rather a curious one. It appears that Captain Coram, the founder's, design was to erect an hospital for foundlings "after the example of France, Holland, and other Christian countries;" and, accordingly, a system of general and indiscriminate admission of illegitimate children was carried into effect, partly by aid afforded, on application, by Parliament. The institution was incorporated in 1739; and Hogarth, besides some of his best paintings, contributed a design for the corporation seal, representing rather a sinister sort of Britannia, with a cap of liberty on the end of a pole, supporting, on one side, as did a female with a multitude of "nipples proper" on the other, a central shield, on which lay a naked infant, "extending its right-hand proper." Hogarth, good man, even took out a few basketfuls of the early foundling fruits to nurse, at Chiswick, where he and Mrs. H. resided. Handel, too, was a generous contributor. He presented an organ to the hospital, and "the Messiah," itself, to be performed for its benefit; but when it was proposed by the corporation to petition Parliament for power to appropriate "the Messiah" more legally and completely to themselves, Handel burst into a rage, exclaiming, "Te Deivel! for vat sal de Foundling put mein oratorio in de Parlement? Te Deivel! mein music sall not go to Parlement!"

Meantime, the objects of the charity became very numerous: frequently there would be 100 women with children at the doors when only 20 could be admitted; the upshot being, of course, much clatter, riot, and disturbance. In 1756, the Commons, taking pity on these and such as these poor women, generously voted 10,000*l.* in order that, "to render the hospital of general utility and effect, it should be enabled to appoint proper places in all counties, ridings, or divisions of this kingdom, for the reception of all exposed and deserted young children." As for the London hospital, a basket was hung at the gate, in which the children were to be deposited after ringing a bell. The fruits of the collective wisdom and beneficence of the Commons were speedily and incontinently reaped. "On 2nd June, 1756, the first day of general reception, 117 children were received; and between that day and 31st December in that year, 1,783 children: in the ensuing year, 3,727 were admitted." Advertisements were issued in June, 1757, and notices stuck up at the corners of the streets and in places of public resort, apprising the public of their

new privilege! The consequences, as might have been foreseen, were lamentable: prostitution was greatly encouraged and increased. Moreover, out of 14,934 children thus collected, no less than 10,389 perished in early infancy! The Legislature precipitately retraced its steps, taking upon itself, however, the burden it had so inconsiderately imposed upon the public funds. In 1760 there still were more than 6,000 to provide for, and it was not till 1769 that they were reduced by apprenticement, &c. below 1,000. More stringent measures were adopted, and the last vestige of the free-and-easy system was abolished in 1801. The hospital, as now conducted, is believed to be instrumental in doing much good. There are at present 400 children supported by it up to the age of fifteen, when the boys are apprenticed, or go into the army bands, &c. and the girls are made domestic servants.

We have not derived our previous remarks from the secretary's volume, although in its pages the original mistake in the foundation is acknowledged. The book under notice is an interesting production; only there is one rather singular omission, namely, the want of any account or description whatever of the hospital building itself, although the chapel is pretty fully described.

VARIORUM.

"THE Geology and Extinct Volcanos of Central France," by Mr. G. Poulett Scrope, M.P. and F.R.S. has been issued by Murray, of Albemarle-street, in a more compact, yet enlarged and improved form, with its illustrative maps, views, and panoramic sketches, reduced in size so as to suit an octavo volume. The first edition of this valuable work on an interesting district of country was issued at a time when the Wernerians were rampant and tyrannical in geological theory; and it is believed that Mr. Scrope's work had much to do with their downfall, the district described having so obviously *not* been "precipitations from the archaic ocean."——In the "School Series," edited by the Rev. G. R. Gleig, Chaplain-General to her Majesty's Forces, "A History of the English Language," by John Edwards, has been published by Messrs. Longmans and Co. This is a very instructive little volume, even to many who have long since gone through their "school series." Would not a comparison of our modern provincial dialects with the ancient forms of the English language constitute an interesting chapter in such a work? Rude and awkward speech of the present day would often be found to be little else than the polite English of old times. There are many striking instances of identity between these; and although some of our northern brethren would resent the idea of calling the Scottish language a provincialism of the English, it, too, is evidently in great part neither more nor less than old English. Some of it is even almost identical with Anglo-Saxon of the seventh century! Thus, for example, a Scot would be perfectly understood in many parts of Scotland were he to say, "I wunna tholl sae mucle wyte" (I won't stand so much blame); and such a phrase would have been precisely so understood by an Anglo-Saxon of the seventh century! It was to the comparison of modern English provincial dialects with ancient English, however, that we referred, and we have little doubt that an interesting chapter in the history of the progress of the English language might be written on such a subject. ——As to "A Catechism of Chemistry; including Heat, Magnetism, and Electricity," by the Rev. J. W. Neat, M.A. of Corpus Christi College, Cambridge (Longmans and Co. publishers), we are rather at a loss what to say. In ordinary cases, if a "book received" do not deserve commendation, we prefer throwing it aside without thinking it necessary to bring it under the notice of our readers at all; but really this little book is so singular a mixture of well-condensed facts and glaring errors, and it seems so capable of being made a good and useful aid to those for whom it is mainly intended,—namely, those about to undergo the new army and other examinations,—that we think it better to notice it, in the hope that by pointing out a few examples of its errors the public may ultimately have the benefit of a corrected edition. Thus, then, in the second page we are told that "hydrogen and nitrogen form water." This would be a fearful world we live in were it so; for hydrogen and nitrogen form the potent alkaline ammonia, while oxygen and hydrogen constitute water. Steam is on the same page called the gaseous condition of water. Steam is vaporous, not gaseous, and the only true gases of water are oxygen and hydrogen. "The most important of the metals" include "magnesium," but not zinc,—rather an odd idea of relative importance! On page 33 "chlorate of potassium" is alluded to: there is no such substance: it is chlorate of potash, the word potash implying that it is chlorate of the oxide of potassium. On page 35, the most powerful alkalies are said to be "ammonia, potassa, and sodium, or soda." Sodium is not an alkali at all, and if it were, so would potassium. Sodium is a metalloid of silvery aspect. On page 36, among salts composed of an acid and an alkali, are described "sulphate of sodium, sulphate of potassium, of zinc, iron, copper, &c." Copper, iron, and zinc are not alkalis, even were they oxides, which alone combine with sulphuric acid to form such salts: moreover, it is sulphate of soda and sulphate of potash—not of sodium and potassium, although there *are* salts of both these, such as chloride of sodium, bromide of potassium, &c. On page 47, the author speaks of "chlorides and bromines": there are no such substances as bromines. But enough: we can spare no more space for such errors: yet they could easily be corrected, and the catechism really be made a good one of its kind.——Richards, of Great Queen-street, London, has published an important and interesting paper by Dr. Greenhow, the lecturer on public health at St. Thomas's Hospital, "On the Study of Epidemic Disease, as illustrated by the Pestilences of London." This paper was originally read before the Epidemiological Society of London. As regards cholera, Dr. Greenhow is of opinion that it was "caused in the seventeenth century by the want of the careful removal of excrement, and has probably returned in our own century in consequence of the rapid growth of towns and the difficulty of removing their excrementitious products." This is precisely what we have ourselves maintained. The open dung-heaps of the seventeenth century were superseded by the covered but more confined, insidious, and dangerous cesspools of later times, and these have so saturated the subsoil of towns, that the evil which the removal of the open dung-heaps for a time suspended, has returned upon us with redoubled intensity. That this is the abiding cause, whatever be the special moving cause in any one season more than another, we think there can be little doubt. It may be that in certain seasons certain malignant infusoriæ or organic microscopic pests may have their nidus in this abomination, and may thence propagate, or may attack human beings before weakened and contaminated by it; or it may be that in certain seasons the scavenging ozone or electrified oxygen of the atmosphere may be awanting, and the evil become rampant; but were the abiding cause to which we allude removed, it is questionable whether either infusoriæ or anything else could possibly produce malignant cholera. ——Half a dozen plain and useful "Directions for the Preservation of Health and the Prevention of the Spread of catching or infectious Diseases," by Dr. Lankester, the medical officer of health for St. James's, Westminster, have been issued in a printed form, and ought to be widely distributed among the poorer classes. We have scarcely seen anything so likely to take the eye of such persons, and to be treated by them as an oracle for their guidance.

Miscellanea.

SILVER IN BELLS.—At the Royal Institution, on Friday, February 19, Mr. Edmund Beckett Denison delivered a lecture "On some of the Improvements in Locks since the Great Exhibition of 1851," the substance of which will be found, among other matters relating to locks, in the second edition of Mr. Denison's book on "Clocks and Locks," to which we have already referred. At the close of it, Mr. Denison exhibited three small bells, made by Mr. Mears: one of the same metal as the great bell of Westminster, which he is now recasting; another, with the addition of as much silver as would amount to 1 cwt. and cost 500*l.* in a 16-ton bell; and the third with rather more. These bells, it is said, bore out the statement made in the lecture on bells last year, that the tone would not be improved by adding silver, of which also no trace has been found in any old bell-metal that has been analyzed.

THE NEW WATERWORKS FOR GLASGOW.—The Loch Katrine Waterworks are progressing rapidly. The piping for the city has been contracted for. Messrs. Thomas Edington and Sons, Phœnix Foundry, are the contractors for about 1,500 tons (in addition to their former contract); and Messrs. Robert M'Laren and Co. Eglington Foundry, for about 3,500 tons. It is expected that the water will be introduced to the city in the autumn of next year.

THE AMERICAN HANDRAILING CHALLENGE.—If Mr. Riddell is really in earnest in undertaking to defend his system against any other, why not reduce the sum named in his advertisement,—say to 5*l.* or 10*l.*—then no doubt he will find some practical man with means and ability to defend a method equal to his own. The enormous sum mentioned appears to me to be named only to give importance to the work. As for the conclusive account he appears to have gleaned in the provinces, it is particularly absurd, as most practical men in the line are aware that it is in London, with few exceptions, where they become acquainted with those principles of handrailing which are alone countenanced in a respectable London firm. By the insertion of this, or the substance of it, in your valuable journal, you will, sir, greatly oblige a number of working men, among whom is your humble servant,—A. BRIDEL, a London Joiner.

THE APPOINTMENT OF SURVEYOR FOR BRIGHTON.—In consequence of a vacancy having occurred in the surveyorship of the borough of Brighton, advertisements were issued for the appointment of another person to fill that office. The number of applicants was no less than sixty-five, and four were selected by a committee of the town council as most fitting for the appointment. This latter number included the name of Mr. John Laing, the borough surveyor for Hastings, but Mr. Lockwood, of Arundel, proved the successful candidate. The votes of council, according to the local *Gazette*, were thus given:—At the outset, "there were seventeen for Mr. Suter, fourteen for Mr. Lockwood, eight for Mr. Laing, and seven for Mr. Rumble. The last name was then struck out, and they proceeded to the next vote, and the result was that those who had voted for Mr. Rumble and Mr. Laing, seeing that the two latter had no chance, coalesced with the Lockwood party, throwing their whole strength in without an exception, thus swelling up Mr. Lockwood's number to twenty-nine, whereas Mr. Suter's party remained in number the same: Mr. Lockwood, therefore, gained the victory. A declaratory motion, that Mr. Lockwood was duly elected, was carried, and the meeting then broke up, after a stormy debate of two hours and a half duration."

ARCHITECTURAL DESIGN, BUCKS AND BERKS.—The "Bucks and Berks Lectures' Association," of which the Rev. Edward Hale, of Eton, is the honorary secretary, propose to hold a central examination, and give various prizes. Amongst those offered we find "A prize of 1*l.* for the best original architectural drawing done in a class, accompanied by a certificate from the teacher of his belief that the design is original." This is a novelty in such a programme, and may serve as an indication of popular feeling.

NEW OFFICES IN WATER-LANE, TOWER-STREET. These offices (Mr. John Whichcord, architect) now approach completion. They have been erected in Water-lane on account of its vicinity to the Custom House, docks, river side, and corn, coal, and colonial markets. The ground, first, and second floors, are suited for offices, counting-houses, sample rooms, and for similar purposes, and are so arranged that a greater or less quantity can be taken *en suite*, according to requirement, the divisional partitions not being arbitrarily fixed. Space, light, and ventilation have been considered, and all the floors are furnished with lavatories and other conveniences. The ground-floor offices have a large part of their area covered with skylight, for the exhibition of samples, &c. The building is entered from Water-lane, and a fireproof corridor extends from thence through the building to an exit in Beer-lane. A stone staircase leads from the centre of this corridor to the upper floor.

THE SCOTTISH NATIONAL GALLERY.—A Treasury minute, drawn up by Mr. Wilson before leaving office, has been passed recalling arrangements for the permanent occupation and appropriation of this building, which contains two series of galleries, or twelve octagonal saloons. The five eastern and one central galleries are to be devoted for four months every year to the exhibition of the Royal Scottish Academy: the five western and one central galleries shall be reserved for the formation of a Scottish National Gallery of Art, and shall be permanently and exclusively so occupied. For the formation of a National Gallery there are four collections of paintings immediately available, namely, the collection of the Royal Scottish Academy, the collection belonging to the Royal Institution, the collection bequeathed to the city of Edinburgh by the late Sir James Erskine, of Torrie, and the collection belonging to the Board of Manufactures, besides various pictures belonging to the National Association for the Promotion of the Fine Arts, and others belonging to private individuals.

ACCIDENT AT THE NEW COVENT GARDEN THEATRE.—On Monday last, a fatal accident occurred to a man named Jeffrys, about forty-five years of age, who has for the last ten days been engaged as a carpenter on the works of the above building. The deceased was walking across the top of the roof for the purpose of continuing his work upon the wooden frames of the skylights, upon which he had been previously engaged, when he suddenly fell through the roof of the centre of the theatre, a distance of upwards of 97 feet, and in his fall he received frightful contusions.

WYNNSTAY, NEAR WREXHAM.—The mansion of Sir Watkin Williams Wynn, unfortunately destroyed by fire on the 6th instant, is to be rebuilt forthwith, under the direction of Mr. B. Ferrey. The first accidental meeting with Sir Watkin in a railway train will be an incident for Mr. Ferrey's biography.

DEATH BY A KITCHEN BOILER EXPLOSION.—A shocking and fatal accident has taken place at the house of Mr. John Turner, of Godley, near Hyde, Cheshire. Without any warning of impending danger, the boiler in the kitchen exploded with a loud report, blowing out a piece of the wall at the end of the house, which is a detached building, and causing the instantaneous death of Mr. Turner's daughter, a young lady of about nineteen years of age, who was in the kitchen at the time. The boiler had a self-feeding apparatus, but it is supposed that it had been choked, and the supply of water had failed. It is said the boiler had no lid or safety-valve, and hence there was no exit for the steam. This occurrence opens a serious and important question as to the proper and improper construction of kitchen boilers.

GAS COMPANIES AND THE PUBLIC.—The petition presented by the parochial and district delegates of the metropolis to Parliament, complaining of the monopoly likely to arise from the recent arrangements between the gas companies, states that, in the metropolis, 840,000 tons of coal are annually consumed in the making of gas, yielding 7,728,000,000 cubic feet of gas, which, sold at 4s. 6d. per 1000 cubic feet, produces a gross income of 1,738,800*l.* per annum, and that the annual sum paid to the various gas companies in London is near 2,000,000*l.* per annum,—a sum which must of necessity be continually increasing. The petitioners submit that the several gas companies should be restricted by legislative enactments to a maximum charge for, and be bound to a particular standard in the quality of, the gas supplied by them to their customers.

THE COST OF MACADAM PAVEMENT AT LIVERPOOL.—Mr. James Newlands, the borough engineer, has submitted to the health committee a tabular return, showing the comparative expense of macadam per square-set pavements. The expense of macadam, as compared with square sets, in round numbers, may be put down as five to one. To keep in repair twenty-three streets, named as being macadamized, requires a total average annual outlay of about 8s. 10½d. per square yard; whilst sixteen of the streets paved with square sets, and which bear the heaviest traffic in town, only cost a total of 1s. 9½d. per square yard. To specify in detail,—for example, Church-street, which is macadamized, costs 11¼d. per square yard per annum, to keep in repair; whilst Park-lane, with square sets, costs 2½d. per square yard per annum. These figures, remarks the local *Journal*, will probably open the eyes of some of our towspeople, and render them less eager to patronise the expensive macadam pavement.

ARCHITECTURAL ASSOCIATION.—On Friday, March 19th, a meeting of the members was held at Lyon's-inn Hall, when a paper was read by Mr. Aickin on "The Science of House-building;" but he was "desirous that his paper should not be published," and there can be no objection to meet his wish by permitting its omission.

PROPOSED MARKET BUILDINGS AT MONTROSE.—It has now been resolved upon by the Montrose Council to proceed with these buildings, according to the design of Mr. Moffat, of Edinburgh, architect. The tenders for executing the works accepted by the committee are the following, viz.:—

Mason Work, D. Scott, Builder, Montrose..	£730	0
Joiner Work, John Gordon, Wright, do.	550	0
Plumber Work, C. Middleton and Sons, do...	144	18
Slater Work, John Lindsay, Slater, do.....	112	12
Plaster Work, D. Hogg and Co. Plasterers, do.	32	0
	£1,569	10

The amount very much exceeds the sum originally proposed to be expended on these buildings. The tendering for the works by the various tradesmen, according to the local *Review*, was very close.

THE SALVATION OF LIFE BY SCIENCE.—We mentioned not long ago how life was saved on the Scotch coast by a barometer. On this subject, at a recent meeting of the Scottish Meteorological Society, Dr. Stark said:—"I cannot sufficiently impress on you the value of the barometer to navigators and to people whose occupation leads them to trust themselves on the dangerous main. Before every storm timely warning is given, by the sinking of the barometer, that a storm is approaching; and, seeing that so many lives are annually lost on our coast from fishermen having no barometer to consult, or not knowing how to read those they have, it would be becoming in our Government to present a barometer to every fishing village, and instruct some of the more intelligent fishermen in its use. But every barometer presented to a village ought to be entrusted to the care of one man, whose duty should be to set an index at a certain fixed hour every night, in order that before the fishermen start in the morning they may see whether the mercury has sunk or risen from the time when the index was set. It would, however, render all barometers much more valuable to fishermen and mariners on our own coast, could a table be constructed showing the periods during each month at which storms might be expected."

WOMEN AND WATCHWORK.—A very interesting report appears in the *Clerkenwell News* of the 13th inst. of a meeting of watchmakers and others, to hear (or rather to interrupt) a lecture on watchwork and the employment of women in its manufacture, delivered by the well-known clock and watch maker, Mr. Bennett, whose exertions on behalf of our unemployed females, as well as of the best interests of our English watchmaking business itself, must be also well known to many of our readers. Mr. Bennett endeavoured to enlighten the more ignorant portion of his hearers by showing that the employment of their wives and daughters in some of the more delicate and mechanical portions of their business would be the means of extending their trade and preserving it from that utter extinction which the enterprise of the Swiss manufacturers threatens it with; but the lecturer was continually met with absurd outcries of "Shame!" and with hisses and confusion. It is to be hoped these mistaken men will open their eyes to their best interests ere it be too late. From what the lecturer said, it appears that in Switzerland no less than 20,000 women derive an honourable and fair livelihood from watchmaking. And what is the consequence to the Swiss themselves?—that the male part of the population engaged in the trade are thereby driven out of employment? By no means; but, on the contrary, that watches are so delicately, so correctly, and yet so cheaply made in Switzerland that no less than 1,500,000 are yearly produced there, besides movements for the American market; while in all England only 186,000 are turned out! One consequence of this state of things has been, that at a time when the American market was closed, both to our own watchmakers and the Swiss, our own market was deluged with watches made in Switzerland! Mr. Bennett thinks, however, that were our watchmaking operatives to see the advantage of employing women and girls, the trade might still be preserved for this country. And let us add, for our own part, that means such as these, put in operation in this and other branches of trade, would go far of themselves to solve the sad question of the great "social evil," as it is called, by providing honourable industrial employment for our surplus female population.

THE FORTIFICATIONS OF DOVER.—Every part of the castle, according to the local *Chronicle*, is undergoing substantial repair, while bastions and mounds, &c. daily arise to view. New buildings are also being erected on the heights, and others enlarged and repaired. Here, also, between the redoubt and the citadel, a chapel-school has been erected for the soldiers and their children. It is composed of brick, with ragstone facings and Bath stone dressings. The style is an approximation to the Gothic. There will be accommodation, as a chapel, for about 800 persons. There is a schoolmaster's residence adjoining. Mr. Moxon is the contractor. The barracks near the grand shaft have been enlarged by the addition of another story and a new wing: they will now accommodate 1,200 men. The subterranean works of the citadel are described as almost impregnable points of attack and defence. Considerable sums have been expended to render the citadel complete in all respects. Some of the more expensive works here were contracted for by Mr. Moxon. A new canteen has been erected at the barracks on the western heights, and various other works done connected with them.

GOODCHILD'S PATENT ECONOMIC STOVE.—A stove has been patented by Mr. Thomas Goodchild, of Guildford, architect. The fire is lighted at the top, in the manner of "the *Builder's* smokeless fire." There is an ash-box fitted on air-tight below, and a guard in front moves down as the fire burns down. The fire is laid, as well as lighted, much as was instructed for the *Builder's* smokeless fire, and it is said that this new stove will burn either Newcastle or Nottingham coal, or a mixture, broken small; that it gives more heat than an ordinary stove, with half the amount of fuel and of trouble; and that the price scarcely exceeds that of an ordinary register.

NEW APPLICATION OF ELECTRICITY: MUSIC "LAID ON."—Electricity is about to be applied to music, says a contemporary. A performer seated before a piano, constructed for the purpose, in London, Moscow, or St. Petersburg, will play a *morceau*, every note of which, by means of the electric wire, will be repeated by another instrument in one of the concert-rooms in Paris. Thus Thalberg will be enabled, without leaving London, to give a concert by telegraph 2,000 miles off.

FALLING IN OF THE ROOF OF A HOUSE.—On Wednesday morning an occurrence which fortunately was attended with no serious results, took place at the Spread Eagle Tavern, Bristol, near the railway station. It appears that the house was erected about five years since, and was covered with a flat roof of cement. Since the late fall of snow the roof has been in a very bad condition, water continually running and dropping from it, and the woodwork with which it was constructed being completely destroyed. On the morning in question, however, it came down with a crash, and was only prevented from falling on the occupier by the flooring of the first story, or an accident of a serious nature must have taken place.

WANT OF EMPLOYMENT AT NEWCASTLE-UPON-TYNE.—At a meeting of the unemployed and of workmen generally held last week, at Newcastle, it was stated that there are 800 workmen out of employment there, and that 120 are working at 1s. a day on the town moor. The main object of the meeting was to adopt a memorial to the Treasury, praying for the reversal of a decision of their predecessors as to the sale of corporation property to Mr. Walters, whereby the working classes would be benefited by an expenditure of something like 150,000*l.* in improvements.

LANSDOWNE COLLEGE, BATH.—We are asked to say that part of the building is warmed by an apparatus put up by Haden and Son, of Trowbridge.

ORNAMENTAL BRICKWORK: CHIMNEYS.—Mr. Henry Childs sends us drawings of twenty-five different sorts of bricks made at his own kiln, and which he has had in use several years, such as chamfered plinth bricks; cornice or base; hollow bricks, to form flue in a 9-inch wall; mullion and jamb for windows; arch bricks, and others. "Having been very successful," he says, "in curing smoky chimneys, I am thoroughly convinced that, if the chimney is carried high enough, and the flue of a reasonable size, the only way to prevent its smoking is to pay attention to the shape and size of the aperture at the bottom, taking into consideration the kind of fuel used, and ensuring a plentiful supply of fresh air by any convenient means of ventilation. I think it is a very great error to cover chimney-tops with the many cork-screw contrivances invented now-a-days, but instead would give the smoke free exit as soon as possible."

ORNAMENTAL WINDOWS.—As the clergy and laity are in the habit of spending so much money upon stained glass windows in churches, might it not under some circumstances be a good plan to adopt photographic pictures—copies, for example, from the ancient masters, properly selected. The photograph being completed, and also painted, another piece of glass could be placed on the face of the photographic picture, which is on glass, and the edges be cemented together air tight. Thus the picture would be perfectly safe from all damage from the atmosphere.—J. E. M.

TENDERS.

For erecting a tavern and two shops in the Curtain-road, Finsbury. Mr. A. Newman, architect. Quantities not supplied:—

Brown	£2,445	0	0
Scott	2,400	0	0
Brake	2,371	0	0
Wood and Sons	2,348	0	0
G. Todd, jun.	2,243	0	0
McLennan and Bird	2,185	0	0
Green	1,887	0	0

For building new National Schools and teachers' residences, at Littlington, near Royston, Cambridgeshire. Messrs. Kendall and Edlin, architects. Quantities not supplied:—

Williams	£1,034 16 0
Goodchild	805 0 0
French	739 0 0
Gimson	693 0 0
Thody and Co.	685 0 0
Oates	650 0 0
Gibbons	650 0 0
Gray	597 0 0
Ayres and Co. (accepted)	575 0 0

For Sneyd Parsonage House, Burslem, Staffordshire. Messrs. Ward and Son, architects. Quantities supplied:—

Batty	£1,230 0 0
Holme	1,068 0 0
Evans	1,045 0 0
Wood	960 9 0
Massey	875 0 0
Walley	870 0 0
Bryan	820 0 0
Jones	800 0 0
Boon	788 6 9

For stores for the Electric and International Telegraph Company, Camden-town. Quantities supplied by Mr. D. T. Brown:—

Piper and Son	£3,230 0 0
Greg	3,125 0 0
Batterbury	2,998 0 0
M'Lennan and Bird (accepted)	2,885 0 0

For house, in Bishopsgate-street Without. Mr. Legg, architect. Quantities supplied:—

Wells	£1,790 0 0
Sergant	1,698 0 0
Cammon	1,615 0 0
Heath and Son	1,595 0 0
McLennan and Bird	1,483 0 0
Thompson	1,375 0 0

For a pair of semi-detached villas, at Richmond, Surrey, for Mr. G. A. Wall. Messrs. Gosling and Hartrup, architects, Twickenham. Quantities supplied:—

Sweet and Carless	£1,680 0 0
Gascoyne, Brothers	1,663 0 0
Houghton and Son	1,653 0 0
Jacklin	1,653 0 0
Sims	1,542 0 0
Towers (accepted)	1,538 5 0

For proposed works at Halesworth Church, Suffolk. Mr. Jeckell, architect:—

Ringham, Ipswich	£1,335 0 0
Lloyd, Norwich	875 0 0
Spaul and Ollett	858 0 0
Peebles and White, Dereham	830 0 0

For works, 314, Regent-street. Mr. Charles Broadbridge, architect:—

	Painting, &c.	Shop Front.
Foxley	£113 18 0	£189 2 0
C. Fish	110 0 0	170 0 0
Baker	107 17 6	160 0 0

For construction of dock on Roff's wharf, Woolwich, for the Directors of the Woolwich Steam Packet Company. Messrs. Church and Son, Woolwich, architects. Quantities supplied:—

		Extra for Wrought-iron Girders.
Moxon, Dover	£2,417 0 0	£225 0 0
Allcock, Hertford	2,252 10 0	220 0 0
Munday	2,228 0 0	296 0 0
Shelborne and Smith	2,200 0 0	238 0 0
Gomm and Bryon	2,158 0 0	410 0 0
McIntosh	2,146 0 0	353 0 0
Nicholson and Sons	2,060 0 0	240 0 0
Knight	1,999 0 0	225 0 0
Hack and Son	1,967 0 0	298 0 0
Houghton and Ley	1,948 0 0	305 0 0
Watts	1,938 0 0	230 0 0
Wardle	1,916 0 0	240 0 0
Piper and Son	1,903 0 0	270 0 0
Tongue	1,805 0 0	216 0 0
Dethick (accepted)	1,638 0 0	347 0 0

For the St. Marylebone National Schools. Mr. Thomas Little, architect. Quantities supplied by Mr. D. J. Brown:—

	With cement dressings.	With Bath stone dressings.
Rudkin	£4,960 17 0	£5,064 17 0
I'Anson	4,480 0 0	4,644 0 0
Morris and Phillips	4,428 0 0	4,578 0 0
Stephens	4,346 0 0	4,451 0 0
Bird	4,360 10 0	4,468 10 0
Cubitt and Co.	4,302 0 0	4,419 0 0
Holland	4,079 0 0	4,154 0 0
Keys and Head	3,930 0 0	4,140 0 0
Myers	3,807 0 0	3,868 0 0
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TO CORRESPONDENTS.

The completion of Mr. Picton's article on Modern German Art will be given next week.

Staining Stone.—A reader wants to know "how to operate on new stone so as to give it the appearance of old; the building under restoration is of the fifteenth century."

Trinity Church, Edinburgh (in addition to the names given in our columns of authors of designs commended (p. 162), *two* architects send us their names as the author of design, marked "*Fides*." We postpone, therefore, giving either.—C. B. (what would be gained?)—S. S. S.—Dantzic (will find calculations left for him at the office).—T. L.—W. S.—H. D.—W. G.—I. R. N.—G. T.—H. and Sons.—J. W. B.—W. W.—G. and H.—T. J.—Salford.—J. B.—C. B.—P. D.—W. H.—W. J. (the number for March 6th).—W. W.—T. P.—S. H. G.—T. E. K.—G. J.—F. H. (in type).—W. J. P. (ditto).

"BOOKS AND ADDRESSES."—We are forced to decline pointing out books or finding addresses.

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London, 20th March, 1858.

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23rd March, 1858.

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